PAPER TRADE JOURNAL
Title Reg. U. S. Pat. Off.

Vol. 114, No. 15 Thursday, April 9, 1942 Price Ten Cents

Newsprint Price Situation Is Confused

Canadian Manufacturers View Freezing of Price At $50 Per Ton For 60 Days As Disturbing—Proposed Canadian Price of $53 Considered Justified — Abitibi Liquidator Appeals To Privy Council.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., April 6, 1942—From what could be learned here concerning the recent action of the Office of Price Administration in the United States whereby the proposed increase of $3 a ton for Canadian newsprint going across the line was given a sixty-day hoist, Canadian manufacturers have been given some cause for reflection.

The Canadian newsprint manufacturer apparently has been coasting along secure in a belief that what has been termed the "good-neighbor" policy of the last four and a half years, (during which time newsprint prices to United States customers have remained consistently at $50 a ton regardless of many added production costs) would be fully reciprocated if and when an increase in the price of newsprint seemed justified. When this time arrived at the end of last year and an advance of $3 a ton, effective April 1 this year, was proposed, it is pointed out, the American Newspaper Publishers' Association took no stand against the proposed price increase and individual newspaper publishers appeared to accept the situation as inevitable and justified. True, the OPA made it known that it was going to make some enquiries in collaboration with the Wartime Prices and Trade Board of Canada to determine if the price increase was justified, but knowing what had happened within his own industry, the Canadian manufacturer of newsprint felt every confidence that the proposed increase in price would be considered pustified. Just what the investigations revealed has not been made known, but it is the common belief that if the OPA had full knowledge of the facts they must eventually realize that the Canadian manufacturer of newsprint was not trying to take advantage of the fact that the wartime price control did not apply to export, but that the proposed increase was based on accumulated costs of various kinds that have come into the picture during the last few years.

Demand for Newsprint Expected to Decline

It is further pointed out here that the demand for Canadian newsprint this year is expected to show some decline. Up to the present production and shipments have been quite satisfactory, but there are a number of indications that things will not be quite so rosy in the near future. For instance, the shipping situation is not improving and overseas shipments are bound to show a decline. All indications point to a decline in advertising and a consequent drop in newsprint requirements.

It was not necessary to apply to the Wartime Prices and Trade Board for permission to raise the price of newsprint to United States customers as there is no control over export prices, and the board announced immediately that the proposed price would not apply to domestic sales. It was at this time that the OPA opened negotiations with the WPTB for a joint enquiry and it is understood that results of operations during the first half of 1942 will be used to determine whether or not a higher price is justified.

Abitibi Liquidator Appeals to Privy Council

R. S. McPherson, liquidator for Abitibi Power and Paper Company and court representative for equity interests, has made a definite decision to appeal to the Privy Council against the decision of Mr. Justice Middleton for a judicial sale of the company's assets and undertakings.

Mr. McPherson announced this decision this week and has the support of shareholder and equity groups. The latest move was made following recent action by the Ontario Court of Appeals, which, by a four-to-one decision, threw out the appeal, and Ontario legislation, just passed, which authorizes an appeal from the recent judgment. There had been some doubt as to whether or not the Middleton order was an interlocutory, or final, order, from which no further appeal could be made after the Ontario Appeal Court had pronounced upon the case. This has now been clarified by the Ontario Abitibi Power and Paper Company. Constitutional Question Act.

As the question of Ontario's power to enforce the legislation embodied in the Abitibi Power and Paper Company Moratorium Act and the Constitutional Question Act is a major point at issue in this case, it is expected that the Ontario Attorney-General will appear, or be represented, before the Privy Council.

Production in Some Midwest Mills Declines

Slump In Advertising Slows Sales of Coated Papers and Outlook Is Complicated By Conversion of Many Industries To War Production — More Power Authorized For Paper Mills — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., April 6, 1942—Curtailment of advertising and sales promotion is having its effect these last few weeks on the sales volume of some of the Wisconsin mills, except those operating on government contracts. The slump is particularly noticeable in the coated paper field, because of the discontinuance of catalogues and other items using large quantities of this item. Operating schedules have been shortened in some of the mills producing particularly for the advertising field.

The situation has restored a plentiful supply of many grades, relieving printers of a trend which for a time appeared to be becoming acute. Prices are still holding firm, however, despite competition for what business is available for the more plentiful brands. The conversion of so many industries for war production complicates the future outlook, which to some manufacturers does not appear any too promising to keep mills at normal volume.

Authorizes More Power for Paper Mills

Increased power will be made available to mills in the vicinity of Oconto and Marinette, Wis., and Menominee, Mich., through authority granted by the Wisconsin Public Service Commission last week to the Wisconsin Michigan Power Company of Appleton, Wis., to carry on an expansion program. The company will spend approximately $114,000 to construct a 10,000 kilovolt-ampere substation near Stiles, Wis., in Oconto County, and a 33,000-volt transmission line from the substation to Oconto Falls, Wis. The company also intends to transfer transformers valued at $40,000 from the sub-station at Appleton, Wis., to the new location. Increased power demands made the installation necessary.

Navigation Opens on Fox River

Mills in the Fox River Valley will begin stocking up coal this spring to avoid possible shortages anticipated by transportation bottlenecks. Navigation was opened for the season last week, and the Fox River Navigation Company has its fleet of tugs and barges ready to begin moving coal and pulp wood from the Docks at Green Bay, Wis. The mild winter and early spring made possible an earlier opening date.

The ice broke up overnight last week in the Green Bay harbor, permitting Great Lakes freighters to get through and dock at Green Bay and Marinette, Wis.

Toll Levies are Approved

Tolls levied by the Chippewa and Flambeau Improvement Company for the last six months of 1941 have been approved by the Wisconsin Public Service Commission. They total $124,550 for mills and power plants along the Chippewa and Flambeau Rivers, representing cost of operation of control dams and reservoirs.

Assessments were as follows: Flambeau Paper Company, Park Falls, Wis., $13,523; Lake Superior District Power Company, Ashland, Wis., $11,181 for the Ashland plant, and $2,820 for the Ladysmith, Wis., plant; Cornell Wood Products Company, Cornell, Wis., $5,437; Northern States Power Company, Eau Claire, $77,411; Eau Claire Dells Improvement Company, Eau Claire, Wis., $14,178.

Fire Destroys Paper Rags

Approximately 200,000 pounds of baled rags destined for bond paper mills were destroyed by a fire in a warehouse at Neenah, Wis., March 28. The stock was owned by Meyer Burstein & Sons, and the loss is estimated at approximately $5,000. The fire was started by two small boys playing with matches.

Thilmany Has Fine Record in Bond Sales

Thilmany Pulp and Paper Company, Kaukauna, Wis., has become a "100 per cent company" in the sale of defense bonds and stamps. A campaign has been completed under the direction of L. C. Smith, personnel director, through which all of the 1,140 workers agreed to payroll deductions with which to buy the war securities. A large chart was maintained outside the employment office during the campaign.

Dr. Van Horn Appointed to Organic Group

Dr. Willis M. Van Horn has been appointed as a research assistant at the Institute of Paper Chemistry, Appleton, Wis., according to announcement of Westbrook Steele, executive director. He will be a member of the organic group, which is under the supervision of Dr. Harry F. Lewis.

Because of his experience with problems of water pollution, Dr. Van Horn's immediate duties will be in the field of disposal of waste from paper and pulp mills. The Institute is cooperating with Wisconsin pulp mills in a study of the reclamation of waste sulphite liquor to meet the demands of the Wisconsin State Board of Health to cease pollution of the Fox and Wisconsin Rivers.

Dr. Van Horn has been serving since 1935 as assistant professor of biology at Lawrence College at Appleton, with which the Institute is affiliated.

Foundation Laid at Paper Institute

Foundations have been completed for the two-story addition to the Institute of Paper Chemistry at Appleton, and most of the steel work for the superstructure is now in place. The addition is being built at the rear of the library building for the purpose of expanding facilities and providing additional laboratories. The structure will be completed this summer, and will be ready for use when the fall term opens.

F. C. Boyce Reelected President

F. C. Boyce was reelected president of the D. J. Murray Manufacturing Company, Wausau, Wis., at the annual meeting of the board of directors last

week. The company manufactures a line of paper mill machinery. M. P. McCullough of Chicago, Ill., was reelected vice-president; J. S. Alexander, treasurer, and C. E. Stakey, secretary. Mr. Stakey is general manager. D. C. Everest, president and general manager of the Marathon Paper Mills Company, Rothschild, Wis., W. L. Edmonds and Grover Keeth are the additional members of the board of directors. Mr. Everest recently made a gift of a completely equipped laundry to Camp Manitowish, operated in northern Wisconsin by the Y. M. C. A.

Nuptials in the Paper Industry

Among the marriages of the last week was that of Addison C. Davis of Eau Claire, Wis., and Miss Mary Hoyt Cowles of Menasha, Wis. It took place March 28 at St. Thomas Episcopal church of Menasha. Mr. Davis is a son of S. R. Davis, who formerly operated the Dells Pulp and Paper Company at Eau Claire. The bridegroom is associated with the Kimberly-Clark Corporation, Neenah, Wis.

Philip Bloom, a technical assistant at the Institute of Paper Chemistry, Appleton, Wis., and Miss Gertrude Chodosh of Syracuse, N. Y., were married Saturday evening, March 28, at Appleton.

Lace Paper Co. To Erect Addition

An addition is under construction at the Milwaukee Lace Paper Company, E. Meinecke Ave., Milwaukee. It will cost approximately $20,000, and will provide additional manufacturing space. Charles F. Smith is the architect, and the contract has been awarded to the Falb Construction Company.

Northwestern Div. To Meet May 8-9

The Spring Meeting of the American Pulp and Paper Mill Superintendents Association, Northwestern Division will be held on May 8 and 9 at Wisconsin Rapids, Wis. The following are the committees in charge: H. P. Baldwin, chairman; Charles Reese, vice-chairman; Howard Richmond, program; Archie Hayes, housing; Robert Knowles, golf; Wm. Thiele, skeet; Mrs. Chas. H. Reese, ladies' entertainment; Tom C. Dutcher, secretary-treasurer.

The business of the meeting will be centered around the conservation and maintenance problems and the problem of procurement and priority.

The theme of the entire meeting will be centered around the slogan, "Don't Let the Axis Catch Us With Our 'Plants' Down."

Turner Construction Co. Gets Contract

The Farrel-Birmingham Company of Ansonia, Conn., has awarded the general contract for the construction of its new plant in Northern New York to the Turner Construction Company, it was announced by President Nelson W. Pickering.

Plans by Thomas H. McKaig, architect and structural engineer, provide for a one-story structural steel, brick and glass manufacturing building measuring 603 x 203 feet, with three craneways, together with an office building, powerhouse and cafeteria. Beman and Candee are mechanical engineers. Estimated cost has been placed at $4,000,000.

OPA Prices on Used Paper Bags

Suggested maximum prices for used multi-wall paper bags, or paper shipping sacks, aimed to encourage conservation of kraft paper and to relieve the pressure of demand on burlap bags, has been announced by John E. Hamm, Acting Price Administrator.

Investigation by OPA has shown that the demand for multi-wall paper bags may increase to 60,000,000 this year, or about 20,000,000 more than were used last year by shippers of salt, sugar, flour, cotton feed, and other food products.

Manufacturers and dealers reported to OPA that many shippers, confronted with a burlap bag scarcity, are using the paper bags for the first time and are not aware that the bags, when properly opened, can be sold to a dealer for reuse, in which case a substantial reduction on the original cost of the bags is effected.

Prior to the war only a few dealers were engaged in trading the second hand shipping sacks but the burlap shortage has caused many dealers to seek additional revenue from the purchase and resale of paper sacks.

Both dealers and manufacturers, in preliminary discussions with OPA, have expressed satisfaction with the suggested prices for dumpers of users and dealers. These prices are presented in the following table:

Table of recommended maximum prices for reclaimed 100# multiwall paper bags are as follows:

	Four Ply Bags		Five Ply Bags	
	Plain	Printed	Plain	Printed
A. Price paid to dumper by dealer	$.030 ea.	$.0225 ea.	$.0375 ea.	$.030 ea.
B. Price paid to dealer by user	.050 ea.	.0425 ea.	.0575 ea.	.050 ea.

Above prices are for carload lot transactions. Recommended L.C.L. prices may be determined as follows: (1) Deduct 10% from price paid by dealer to dumper. (2) Add 10% to price paid to dealer by user. Bags will be bought by dealer f.o.b. source and sold by dealer f.o.b. destination or "full freight allowed basis."

In general, bags used for packing of food ingredients or products may be reused for packing, a non-food product. Thus bags which are received primarily by baking concerns, confectioners, bottlers, canners and preservers, can be reused to ship fertilizers, sand, coal, kindling, sawdust, aluminum shot, plumbing supplies, and sewage and garbage for rendering plants.

Manufacturers have estimated that 75% of the 1942 production of new paper shipping sacks can be reused if the dumpers instruct their workers in the proper methods of handling the bags. Educational matter in the handling of the bags has been made available to the dealers and the users by the manufacturers and by the Paper Shipping Sack Manufacturers Assn., 370 Lexington Avenue, New York.

Further price action in this field may be taken by OPA in the future if it is found to be necessary.

Perry W. Lesh Heads Community Fund

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., April 6, 1942—Perry W. Lesh, president of the Lesh Paper Company here, has been re-elected vice president of the Indianapolis Community Fund.

He is a former president of the organization and for many years has taken an active part in the annual fund conducted for charitable purposes.

Midwest Paper Market More Orderly Today

Heavy Government and Good Trade Demand Expected To Maintain Activity In Paper Market—Decline In Advertising Lowering Demand For Book Papers—Paper Milk Bottle Fight Is Continued.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 6, 1942—Reports from Chicago paper headquarters indicate that while the industry in general is still operating to capacity enough "breathing spell" is being created to permit the mills to catch up on their back-logs. It is indicated that government demand, augmented by consumer demand will be sufficient to keep the industry in an excellent position and make it possible to develop a more orderly consideration of regular market prospects for both now and in the future.

Book papers in general and specific lines dependent upon mail order campaigns, continued to feel the effects of freezing and clamp downs on merchandise which hitherto has been offered to the public at this time of year and in great quantities. Sulphites continued to be in a strong position while groundwoods likewise found the market very firm though demand was said to be not as heavy as a week ago. The board market found itself revamping conditions to meet government requirements rather than consumer needs. Waste papers were strong though the price paid for waste papers here was publicly reported as not sufficiently high to bring out tremendous quantities of paper wherein delivery costs were too high to invite collection.

Paper Box Group Surveys Market

The Folding Paper Box Association, meeting in Chicago last week, learned that war needs may soon force many cartons off of retail store shelves. One of the speakers at the Association convention, William W. Fitzhugh of the War Production Board, pointed out that folding box manufacturers may find themselves too busy making boxes for the United States to meet many of the ordinary consumer goods packaging needs. "As the production schedule accelerates day by day," pointed out Mr. Fitzhugh, "it seems that more and more boxes will have to be made for purposes not now understood and I consider it inevitable that this demand will be such as to compel the scaling down of civilian uses."

The convention also listened to a fact-finding survey which indicated that "ladies prefer boxes." Of the 1503 housewives in 15 communities who were surveyed, 1,279 of them preferred the folding box to the paper bag. Of 211 retail grocers, 86.2% preferred the folding box. However, in the light of Mr. Fitzhugh's remarks, the ladies and the grocers are going to like some other form of conveyance—regardless! The Association elected Walton D. Lynch, vice-president of the National Folding Box Company, as its chairman for the ensuing year. M. G. Fessenden, Ace Carton Company, Chicago, was elected vice-chairman. Consensus of convention opinion? That the folding paper box industry would be very, very busy in the next twelve months—but that a good part of the time it would really be supplying the goods for Uncle Sam!

Pilcher-Hamilton Suffers Fire Loss

One of the most serious fires in the history of the Chicago paper industry occurred this week when the entire stock of the Pilcher-Hamilton Company, paper wholesalers, was either burned or destroyed by water. The fire swept through the six story building at 340-48 N. Dearborn street and thirty-five pieces of apparatus answered the 5-11 alarm. Several floors in the building were completely gutted and the damage caused when the roof fell in added to the general destruction of the large paper stock on hand.

The company immediately secured space on the 9th floor of the building at 111 N. Canal street which has been the headquarters for part of the Butler paper organization here. At the present time Pilcher-Hamilton has secured about half of the square feet it formerly had and already has a car on the tracks and is doing business. The telephone number is Dearborn 8467. Future plans are not yet certain and a Pilcher-Hamilton executive said this week that they were "still up in the air" as to the next step. Several of the floors would have to be rebuilt entirely.

Nathan Bergstrom a Chicago Visitor

Nathan Bergstrom of the Bergstrom Paper Company of Neenah, Wisconsin, was a visitor at the Monday, March 30, meeting of the Salesmens Association of the Paper Industry, western division. Aside from a general round table discussion the balance of the meeting featured an interchange of ideas and a report from Joe Heyer, membership chairman, that he expected to announce three new members within the week.

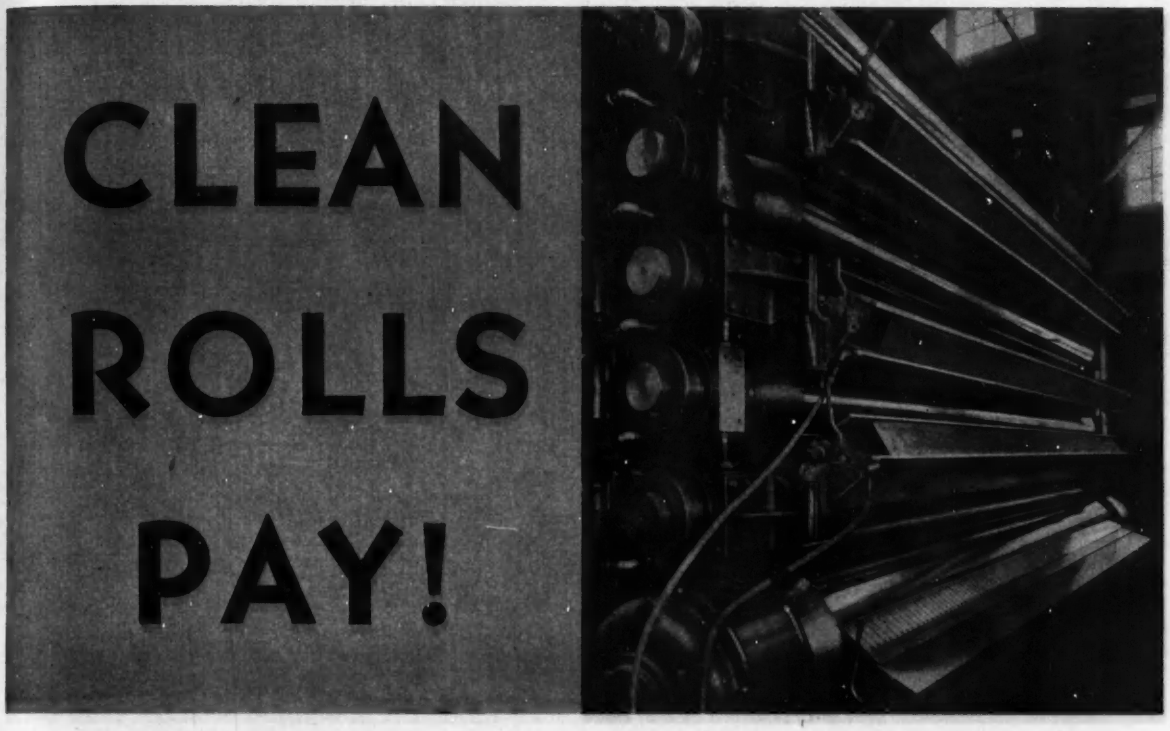
State Intervenes In Paper Bottle Case

Facing the possibility that the United States Supreme Court may return the now famous paper milk bottle case back to the Illinois courts, the five year fight on the use of paper milk bottles this week got the attention of Illinois' own Attorney General George F. Barrett. Mr. Barrett filed with the U. S. Supreme Court a petition to intervene in oral hearings which have been going on in Washington this week. "The present action of the city in attempting to bar the sale of milk in paper containers," said Mr. Barrett, "is obviously intended to give the bottle manufacturers a monopoly. The answer to the whole question is simple. If the housewife wants to buy milk in a carton, let her have it.

Midwest Safety Group Announces Plans

Programs have been distributed for the twentieth annual Midwest Safety Conference and Exposition which will be held in Chicago at the Sherman Hotel on May 5, 6 and 7. An imposing list of exhibitors will display a large variety of accident prevention and safety merchandise and several educational exhibits have been arranged. The speaking program

Now, More Than Ever



Each and every papermaking roll does its job one hundred per cent day in and day out:

1. When it's equipped with a doctor that maintains light but firm blade contact continuously along every inch of the roll, regardless of roll irregularities, temperature or movement of the roll—a *Vickery* Doctor.
2. When that doctor is carefully engineered to fit the job. (That's a part of every Vickery Doctor application.)

If there's a single roll anywhere along the line that's not now Vickery Doctored, better look into it.

BIRD MACHINE COMPANY, SOUTH WALPOLE, MASS.

VICKERY DOCTORS

has been divided into a group arrangement covering Industrial Safety, Industrial Hygiene, Fire Prevention, Industrial Defense and Commercial Vehicle sessions. The banquet address on the evening of May 7 will be given by Dr. Allen A. Stockdale, special representative of the National Association of Manufacturers of New York. Governor Dwight Green of Illinois will speak at the Industrial Defense sessions. Paper manufacturers safety executives from Illinois, Michigan and Wisconsin are expected to be on hand for the three day session.

Discuss Waste Prevention

The March 30 meeting of the Illinois Manufacturers Cost Association was given over to a discussion of "Winning the War by Eliminating Waste." H. P. Dutton of the Illinois Institute of Technology discussed "What Can Be Done to Eliminate Waste in the Factory" and E. C. Hill of the WPB addressed the group on the progress of the scrap movement. Mr. Hill discussed the salvage of such waste material as cannot be utilized in factories.

It was also announced that State salvage director Nathaniel Leverone has appointed T. J. McHugh as assistant secretary for Illinois of the War Production Board's general salvage section of the Bureau of Conservation.

Beach & Arthur Aids War Effort

PAPERVILLE, Pa., April 6, 1942

Editor PAPER TRADE JOURNAL:

During the past month we started a campaign to enroll all of our hourly paid employees, as well as salaried ones, to purchase defense bonds. We are very happy to state that our mill has subscribed 100% and is using the payroll deduction plan. We here at Paperville were the first industrial plant in our county to install such a plan with 100% results.

Along with this line of helping and getting people conscious of government bonds we started a clean-up campaign several weeks ago. We broke up the mill into departments and each week we gave government defense stamps to each employee in the department which showed the most improvement in cleanup.

Another plan that we put into effect was a suggestion box plan. All employees were allowed to put suggestions in this box. At the end of the week a committee of four, two from the executive force and two from the men in the mill, were chosen. The first prize was a $5.00 defense stamp; the second prize, a $3.00 defense stamp; and the third prize, a $2.00 defense stamp. We figured that this plan would not only get our employees stamp and bond conscious but also would help in the government waste program.

A. W. REDLIN, General Superintendent,
Beach & Arthur Paper Company.

Papazian Export Corp. Expands

The Papazian Export Corporation, specializing in the export of paper and cardboard among other things, at 401 Broadway, New York, is expanding and doubling the size of the quarters it occupies at the present time. This step has been taken as the business of the firm has greatly increased and it has established a Latin American department doing business principally in the Caribbeans, West Indies and South America.

Apprehensive About Future Supplies

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., April 6, 1942—While business in most lines of paper and paper products continues good, there continues to be some apprehension concerning future stocks. This particularly is true in the box making and novelty manufacturing business. At the present time several local factories have had to curtail their production a day or two at a time while awaiting delivery of much needed raw material. Prices in all lines, naturally, are firm to strong with no indication of any changes at the present. Credit conditions are better than they have been for years, but there is no indication that the situation will be expanded beyond the bounds of safety.

Fine paper demand is good, bonds, books and ledgers going nicely with every indication of a continued strong demand. Generally speaking the trade has been able to receive more stock than was expected when the new year opened.

Demand for building paper, while not as strong as it was a year ago, is satisfactory. Due to the fact that this city is in a defense area the local builders are not afraid of having their supplies curtailed and thus far have been able to get all supplies necessary. The outlying areas in the county are particularly active in new construction, but this volume is not shown on the city building reports.

Newsprint demand, in spite of many large advertisers being hit by priorities, continues good. Lineage is about level with a year ago, the local advertisers apparently taking up the slack caused by some dimunition in lineage by foreign advertisers.

Box and container manufacturers are producing all they can find raw materials for. Demand has been very heavy during the last two weeks. Consumer demand from the dairy industry has been increasing with the prospect of the ice cream trade increasing.

Mill buying of waste paper has been heavy and every effort is being made in this territory to avoid wasting any old paper. The rag market also has been active and prices are firm.

Reference File on Plastics

The Interscience Publishers, Inc., 215 Fourth avenue, New York, N. Y., have begun to issue a number of loose-leaf pages on Resins, Rubbers and Plastics. These sheets are being edited by Prof. H. Mark of the Polytechnic Institute of Brooklyn and E. S. Proskauer and are issued monthly, the first issue containing 33 pages. The annual subscription is $35.00. Between 500 and 600 pages will be issued in 1942.

The contents consist of condensations from scientific and other papers, including the major illustrations.

It is not only issued in the form of loose leaves but is also indexed for filing.

The general part relates to physical and chemical properties, physical and chemical methods of testing, chemical statics and kinetics, manufacture, molding and vulcanizing, finishing of products, applications.

The special part is subdivided according to substance groups such as acylic resins, cellulose plastics, butadiene rubbers, etc.

Some subjects covered include hydrolysis of mercerized cottons, deterioration in d. c. fields of paper-dielectrics containing chlorinated impregnants, oxidation of cellulose in nitrogen dioxide, thermodynamics of high polymer solutions, etc.

Pacific Shipments of Newsprint Suspended

Temporary Stoppage of Flow of Newsprint Through Eastern War Zone A Severe Blow To Canadian Mills—Exports In 1939 Totaled Nearly $8,000,000 — Important Conservation Measures Adopted.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., April 6, 1942—The news from Australia that shipments of newsprint from North America have been suspended was not unexpected, but it suffices to give the test blow for the time being to the Pacific trade of Canada's pulp and paper mills. Prior to the war Canada was exporting a considerable quantity of newsprint to countries on the other side of the Pacific Ocean. In 1939, the export of newsprint to Australia was 2,616,234 cwt., valued at $6,372,049; to New Zealand, 463,400 cwt., valued at $1,099,872; to British India, 48,700 cwt., valued at $130,375; to Ceylon, 10,826 cwt., valued at $26,619; to the Straits Settlements, 11,463 cwt., valued at $29,948; to Hong Kong, 19,773 cwt., valued at $55,266; to the Netherlands East Indies, 40,454 cwt., valued at $86,678; and to the Philippine Islands, 48,252, valued at $127,463; a total of close upon $8,000,000.

The cable announcing the suspension of shipments states that consumption of newsprint by all newspapers must be further reduced by one-fourth, as all shipping space must be reserved for more urgent war needs. It was added that "Australian newspapers for the past year already had reduced newsprint consumption to 55 per cent of prewar consumption. Australia's current stocks, plus Australian production which is still in its infancy, will last two years."

Government Conservation of Paper

The Dominion Government is reported to be moving toward the conservation of paper through the appointment of an inter-departmental committee to study the official publication field and suggest curtailments where these are practicable. There has been a tremendous increase in the volume and cost of the work executed by the Department of Public Printing and Stationery as the national war effort has expanded. Government orders have been on such a scale that at times the whole output of mills has been practically commandeered. It is felt that many departments have not felt the urge to economy in the use of paper that the situation demands. Hence the move to survey the whole field and put economy into effect.

Important Conservation Measure

An important measure for improving regulations for forest conservation has been introduced in the Quebec Legislative Assembly. This would oblige all lumber companies, and not railway companies only, to place at the Government's disposal the number of employees needed to assure the observance of forest-fire protection provisions.

The bill would empower the Government to do away with the travel permit for holders of hunting and fishing licences and prospectors. A separate permit for travel in the forest will be issued without charge.

Power also would be given to the Minister of Lands and Forests to cancel travel in the forests without the authorization of the Lieutenant-Governor-in-Council being required.

Another clause of the measure would suppress unlawful occupation of public land and would permit the arrest of squatters at once and without warrant.

The bill also would remove all possibility of claims for improvements or for personal effects left on the premises after expulsion ordered by the court upon a petition against a person in illegal possession.

Mill Inventory Restriction Lifted

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 8, 1942—Manufacturers of paper, paper board and paper products who consume waste paper will be permitted to accumulate inventories of this essential material without restriction under an order issued today by the War Production Board.

General Inventory Order M-129 removes the inventory restrictions imposed on waste paper consuming mills by Priorities Regulation No. 1, and permits these mills to build up supplies without any prohibition.

The purpose of the order is to encourage mills to stock up with waste paper now, while government-sponsored collection agencies are gathering supplies in ever increasing quantities, instead of delaying purchases until possible transportation or labor shortages may make it difficult to obtain supplies.

Paper mills consuming waste paper must continue to make weekly inventory reports to the War Production Board on Form PD-240, and from the information received the Pulp and Paper Branch will determine to what extent the mills are taking advantage of the present opportunity to obtain waste paper.

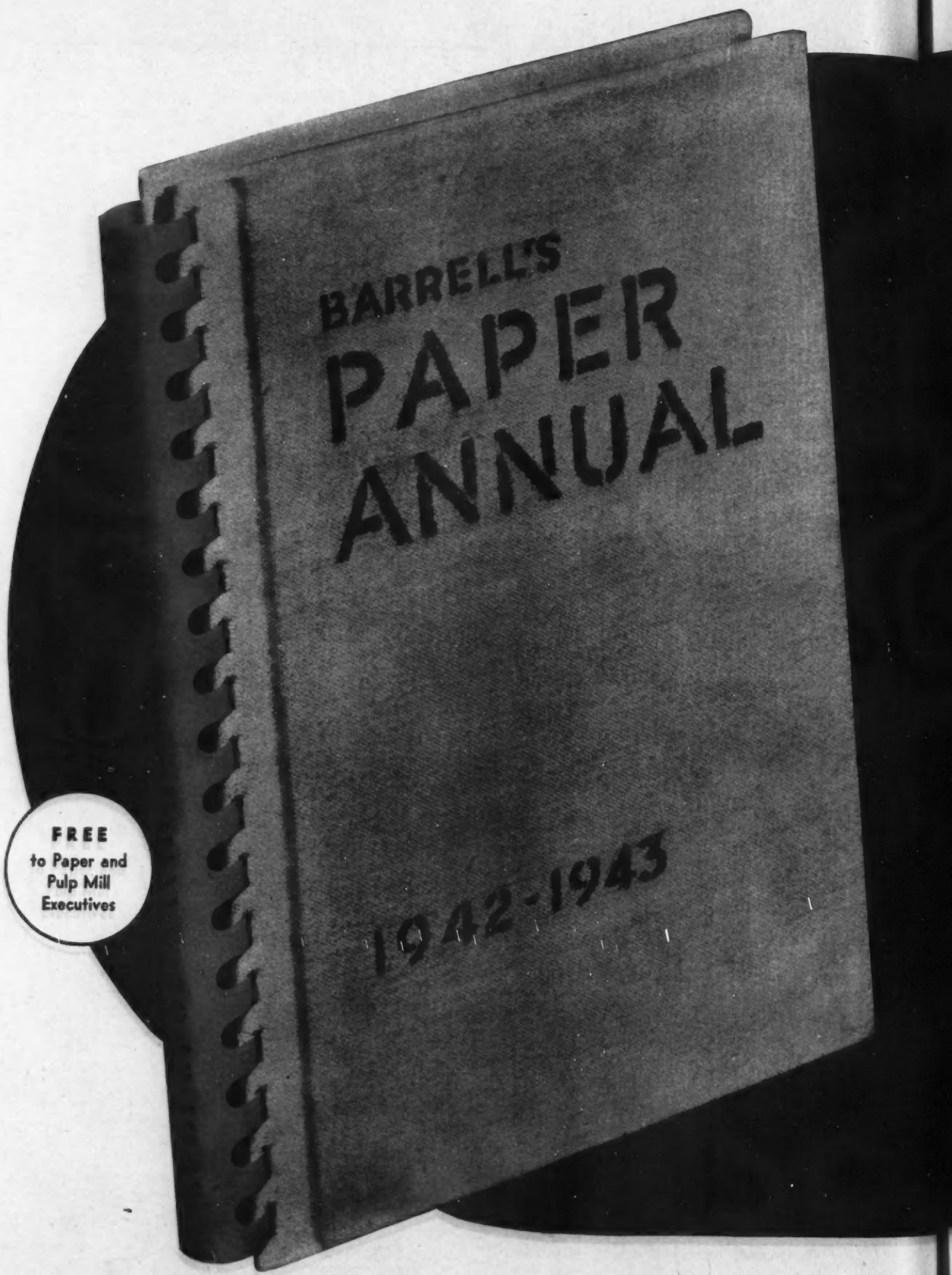
Title 32—National Defense, Chapter IX—War Production Board, Part 1183—Waste Paper, General Inventory Order No. M-192.

To permit Accumulation of inventories of waste paper—Inventory Order.

(a) Revocation of Inventory Restrictions as to Waste Paper. Notwithstanding the provisions of any Regulation or Order heretofore issued by the Director of Priorities of the Office of Production Management or by the Director of Industry Operations of the War Production Board, any person may make deliveries of waste paper, and any person may accept deliveries thereof, although the inventory of waste paper in the hands of the person accepting such delivery is, or will by virtue of such acceptance become, in excess of a practicable working minimum.

(b) Applicability of Priorities Regulation No. 1. Except to the extent that the provisions of paragraph (a) are inconsistent therewith, all transactions involving waste paper shall be subject to the provisions of Priorities Regulation No. 1 as amended from time to time.

(c) Effective Date. This Order shall take effect at once and shall continue in effect until revoked by the Director of Industry Operations.


BARRELL'S
PAPER
ANNUAL
1942-1943
FREE
to Paper and
Pulp Mill
Executives

PAPER

will help to win this war

PAPER will help to win this war — not just paper, but more paper, and again more paper!

To make more paper we need more cooperation within our allied industries. We must support our associations and their leaders. They need our help.

To that end Barrell's Paper Annual is dedicated to the Paper Industry.

BARRELL'S PAPER ANNUAL includes a directory of all officers of the American Paper & Pulp Association and its chief affiliated divisions.

It lists the officials of the American Pulp & Paper Mill Superintendents' Association; of the National Paper Board Association; of the Salesmen's Association of the Paper Industry and of the National Paper Trade Association.

BARRELL'S PAPER ANNUAL has the first illustrated directory of paper industry association executives.

Graphs are included showing capacity and actual production of paper machines in the United States from 1918 - 1941.

A graph of total wood pulp production, consumption, imports, exports and total paper production since 1900 shows the record we must definitely beat.

An illustrated glossary of *Paper Trade Terms* is included, and a special article on *What a Dryer Felt Ought to Do.*

Apply for a free copy on your company letterhead, stating your position in the company. Deliveries on or before May 1st.

WILLIAM L. BARRELL COMPANY

Lawrence, Massachusetts

Resistance to Tear and the Measurement of Surface Friction or Slip of Paper

By F. M. Williams [1]

Of all the physical properties of paper, probably its resistance to tear is the most important. Paper more often fails in service by tearing than from any other cause. Paper bags tear. Newspapers tear. Machine breaks start with a tear.

The tear test is more important even than tensile strength test, as paper in service is rarely subjected to pure tension strains or bursting stress. In paper machine operation, comparison of the tear tests in the machine and the cross directions, gives valuable information as to the cross-felting of the fibers and formation. Accurate means and methods for the measurement of the tear of paper are most essential in judging a paper's suitability for a given purpose.

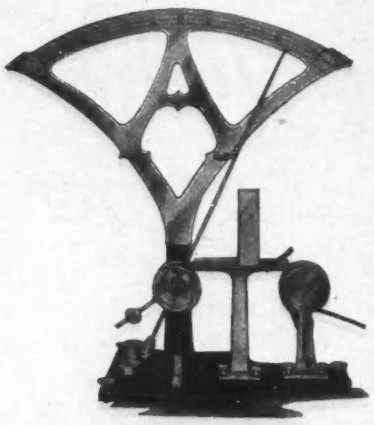
Tear Tester

The Williams Apparatus Company has recently developed an instrument which offers some advantages both in sensitiveness and accuracy over present methods of measuring tear. The instrument is of the pendulum type and consists of a revolving drum mounted on ball bearings with a suitable stand, with accurately counterbalanced pointer not rigidly attached to the drum but moved forward by contact with a pin projecting from the back of the drum. The load is applied through a similar revolving drum directly attached to a motor, which through a reducing gear applies load at the rate of 1 r.p.m.

The two ends of the slitted sample, 1 inch wide, are attached to the revolving drums by placing the sample in slots and folding over ends by means of a spring clip arrangement which holds the sample firmly in place. With sample so arranged, load is applied by pressing switch. As the pendulum weight rises, the needle is moved forward over a graduated scale until tearing takes place, at which point the needle stops. This reading may be taken as initial tear, but the test may be continued to determine presence of hard spots which will advance the needle slightly further.

[1] Williams Apparatus Company, Watertown, N. Y.

Direct Pull Tear Tester



Direct Pull Slip or Friction Tester

The scale is graduated in three ranges corresponding to different weights on pendulum. The upper scale indicates from zero to 100 grams, graduated to single grams; the middle scale indicates from zero to 500 grams, with 5-gram subdivisions; the lower scale indicates from zero to 1000 grams with subdivisions of 10 grams. Where heavier weights are desired, a 2-kg. pendulum weight may be supplied and the lower scale readings multiplied by two.

It will be noted that this measures the tearing resistance of a sample of paper in grams *direct pull* and not by the indirect method of indicating the absorbed energy of a falling weight.

It was noted in comparison of this method with the conventional method of measuring tear that the results run somewhat lower on the direct-pull instrument than on the other. However, when this direct-pull method is checked by lifting a known deadweight attached to one end of a slitted sample, the results are found to indicate that tear tests measured by the direct-pull method, although lower, give a more truthful indication of actual tearing resistance due to the fact that other methods of measuring tear involve a certain amount of tensile strain as well as pure tearing resistance.

For example, when the experienced operator makes the familiar tear test between his thumbs and fingers, it makes all the difference in the world where his thumbs are placed with reference to the edge of the paper. When his thumbs are placed exactly on the edge, a true tear takes place. When his thumbs are placed a quarter of an inch from the edge of the paper, a tensile strength test is being made.

Slip or Friction Tester

The instrument also has another important adaptation; namely, as an instrument for the measurement of surface friction or slip of paper. The accurate measurement of this property is important as indicat-

ing the ease with which paper and paperboard containers will slide upon each other in handling. Friction or slip is important in press feeding as well as in the removal of interleaving paper in film packs. The measurement of surface friction may be taken as an indication of this degree of calendering.

So far as we know, the only method for measuring slip is by means of the basic principle of the inclined plane. Even with a motor-driven lifting mechanism this method is far from satisfactory and fails to give very concordant results. This method also is indirect in obtaining true friction in pounds pull on the horizontal because it involves a conversion through sines and cosines of weight and angles.

Adaptation to Measurement of Friction

The adaptation of this instrument to the measurement of friction by direct pull consists in providing a plate glass table between the two movable drums at the height of the upper surfaces of these drums. Instead of a slit sample as in the tear test, two samples are cut 1 inch wide, and one end of each sample is clamped respectively upon the movable drums. These samples are cut of such a length—10 inches—that they overlap each other about three inches. These rest upon the plate-glass table. The lap is so arranged that the lower sample is the one connected with the motor drum or pulling drive. A fixed weight erecting a pressure of 100 g. per sq. cm. area is now placed upon the lap. The motor is started and the load applied, causing the sample to slide upon the plate-glass table against the resistance of the pendulum until slipping occurs at the lap, at which point the indicating needle stops; and it is only necessary to note the number of grams direct horizontal pull necessary to resist slippage.

Valuable Applications

The calibration of the instrument is readily checked at any time by suspending known weights attached to a thread over the pendulum drum.

We believe this instrument has valuable applications in the measurement of these two important properties of paper.

Fulton Brotherhood Elects Officers

[FROM OUR REGULAR CORRESPONDENT]

FULTON, N. Y., April 6, 1942—Several hundred members of the International Brotherhood of Pulp, Sulphite and Paper Mill Workers held a meeting this week to elect a new slate of officers. The election was necessitated because several officers of the union were expelled following a labor dispute at the plant of the Sealright Company. John Lincoln was elected president of the organization, succeeding Seward Small. Other officers elected are James Otis, vice president; William Brownell, vice president; Paul Licourt, vice president; Genevieve Wettering, recording secretary; Theodore Dann, financial secretary; George Washer, treasurer; Winfield Browning, William Dolan and George Hartrant, trustees; Earl Cook and Leo Morrison, guards.

J. D. Winans Named Sales Manager

James D. Winans has been named sales manager of the C. G. Winans Company, wholesale distributors of paper and twine with warehouses at Newark, Trenton and Asbury Park, N. J.

Obituary

V. Howard Larsen

V. Howard Larsen, 54, vice-president in charge of sales of the Crystal Tissue Company, and a prominent figure in the industrial and civic life of Middletown, Ohio, and widely-known man in the nation's paper industry died April 2 at his home, 301 The Alameda.

Mr. Larsen was stricken with myocarditis last July and his condition steadily grew worse in succeeding months.

Coming here from Indianapolis, where he was associated with the Crescent Paper Company for 17 years, for the last 11 years he had directed sales of the company.

He was a member of the board of governors of the Tissue Association and chairman of several committees directing the industry's activities.

Mr. Larsen had been engaged in the industry many years, starting in a sales position with the Northern Paper Mills of Green Bay, Wis., his birthplace. While with the Crescent Paper Company, of Indianapolis, he was manager of the coarse paper department, general purchasing agent and assistant to the president.

The funeral was held Saturday in charge of the Rev. Reuben F. Pieters, pastor of First Presbyterian Church. Burial was in Woodside Cemetery.

Fred G. Smith

[FROM OUR REGULAR CORRESPONDENT]

FULTON, N. Y., April 6, 1942—Fred G. Smith, 68 years old, superintendent of the Victoria Paper Mill Co., died last week at his home here following an illness of several months. He was the oldest employee in regards to service with the concern, having been identified with it for the past 47 years. He was born in England but came to this country when a child. He was prominently connected with a number of fraternal organizations. The principal survivors are his wife and a son.

Howard B. Hollis

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., April 6, 1942—Howard B. Hollis, veteran wholesale dealer, died this week at his home in Chicago. Services were held at 5501 N. Ashland avenue and interment was in the Graceland cemetery. Mr. Hollis was executive president of Hollis & Duncan, Inc., 732 West Lake street. He become associated with the firm more than 45 years ago and first worked as a wagon man. Mr. Hollis was 64 years old at the time of his death. A widower, he is survived by two brothers and three sisters.

Walter A. Nivling

Walter A. Nivling well known technical specialist in starch products for the Huron Milling Company for the past 45 years, died of heart attack on March 31st in Boston, Mass. Mr. Nivling was born in Tyrone, Pa., in 1873 and graduated from the University of Michigan in 1899. He was active for many years in the Technical Association of the Pulp and Paper Industry and was the author of an authoritative book on starches.

CONSTRUCTION NEWS

Pisgah Forest, N. C. — The Ecusta Paper Corporation, manufacturer of cigarette papers, has approved plans for one-story addition to mill, to be used primarily for storage and distribution. Cost estimated close to $70,000. General erection contract has been awarded to the Fiske-Carter Construction Company, Greenville, S. C., and work is scheduled to begin at once.

Los Angeles, Cal. — Pioneer-Flintkote Company, 5500 South Alameda street, Vernon, Los Angeles, manufacturer of roofing papers, box board and kindred products, a division of Flintkote Company, 30 Rockefeller Plaza, New York, N. Y., has filed plans for one-story addition to mill, reported to cost about $15,000, with equipment. It will be used for storage and distribution. General contract for construction has been let to Austin Company, 777 East Washington boulevard, Los Angeles, and work is being placed under way. Company also has awarded contract to Reid & Alexander, 3124 Olive street, Los Angeles, for a tank installation at its mill, and for which a building permit has been secured, work to proceed at once.

Charlotte, N. J. — The Sutphin Waste Paper Company, occupying leased space in building at 601 South Cedar street, recently destroyed by fire, as noted in these columns, has arranged through the owner, George W. Patterson, president, Morgan Heater Company, for rebuilding of structure, and will continue operations at that location. General contract for work, estimated to cost over $20,000, exclusive of equipment, has been awarded to the Southeastern Construction Company, 218 West Second street, Charlotte, and will proceed at once.

Indianapolis, Ind.—The American Paper Stock Company, 320 West Michigan street, commercial paper products, will begin work at once on new one-story and basement building, about 80 x 135 feet, on West Michigan street, to be used for storage and distribution, with company headquarters and sales offices occupying part of structure. Cost is reported close to $40,000, including equipment. General erection contract has been awarded to Orville W. Wise, 2537 Burton street, Indianapolis. D. A. Bohlen & Son, Majestic Building, Indianapolis, are architects.

Woonsocket, R. I.—The Imperial Paper Box Corporation, 252 Newport street, Brooklyn, N. Y., manufacturer of stiff paper boxes and other containers, has taken over part of the former textile mill of the Nyanza Company, Woonsocket, idle for some time past, and will occupy large space in the structure for complete production. It is expected to provide equipment and facilities for employment of over 500 workers. The four-story structure, heretofore held by Community Enterprise, Inc., a local realty organization, has been purchased by Harry Jawitz, Brooklyn, and associates, and will be remodeled and improved at once. Early occupancy is planned by the Imperial company, which, it is understood, will remove certain equipment and facilities from Brooklyn plant to new location.

Kimberly, Wis.—The Kimberly-Clark Corporation, manufacturer of book, catalog and other paper stocks, proposes to have new addition to mill, now in course of erection, ready for service at early date. As previously noted in these columns, the structure will be one-story and basement, about 60 x 180 feet, and will be used for expansion in the chemical division at the mill. It is reported to cost in excess of $75,000, including equipment. Erection contract is being carried out by Fluor Brothers Construction Company, 48 Otter street, Oshkosh, Wis.

Los Angeles, Cal. — The California - Oregon Paper Mills, a division of the Columbia River Paper Mills, 2001 East 57th street, Vernon district, manufacturer of wrapping paper stocks, tissue stocks, etc., has filed plans for alterations and improvements in one of buildings at mill. An official estimate of cost has not been announced. Work will begin at once and will be carried out by day labor.

Portland, Ore.—The Mailwell Envelope Company, 2136 S. E. Seventh street, manufacturer of envelopes for commercial service, and other paper specialties, has completed plans for new one-story addition to be used primarily for storage and distribution. It will cost close to $20,000, including equipment. General erection contract has been awarded to Reimers & Jolivette, Railway Exchange Building, and work will be placed under way at once. Richard Sundeleaf, Fenton Building, Portland, is architect.

Chicago, Ill.—The Transparent Package Company, 1019 West 35th street, manufacturer of paper boxes and containers, has begun erection of new one-story plant addition at 3514-36 South Morgan street, to be used as a bridge and conveyor house, as recently noted in these columns, and will push work for early completion. Cost reported about $20,000, with equipment, E. W. Sprowl, 2001 West Pershing road, has the general construction contract. A. Epstein, last noted address, is consulting engineer.

Augusta, Me.—According to an official compilation, pulp and paper mills in Maine will use an estimated total of 1,160,000 cords of pulp wood during the present year, an increase of about 100,000 cords over the consumption in 1941. Pulp wood producers, it is stated, have found the peeling too short and too dry up to the present time this year, while lack of rain, lowering the lakes and rivers, has gone to retard operations, developing handicaps for desired transportation.

New Companies

New York, N. Y. — Harold Paper Products Corporation has been chartered with capital of 200 shares of stock, no par value, to deal in paper goods of various kinds. New Company is repre-

sented by Albert J. Wortzman, 299 Broadway, New York, attorney.

New York, N. Y.—The Normax Waste Corporation has been organized with capital of $10,000, to deal in waste paper products, etc. New company is represented by Irving F. Berger, 79 Wall Street, New York, attorney.

Kalamazoo Discusses Electron Microscope

The Kalamazoo Valley Section of the Technical Association of the Pulp and Paper Industry met at the Park-American Hotel, Kalamazoo, Mich., on April 5, 1942. Fred L. Chappell, Jr., of the Sutherland Paper Company, presided as chairman.

Following the dinner, George R. Sears, of the Institute of Paper Chemistry, discussed the work he has been doing on the electron microscope. Dr. Sears showed the comparison between the optical and electron microscope with respect to their optical system and construction. He explained how the use of the electron microscope permits a greater resolving power and therefore a greater useful magnification. He also pointed out that, by the use of electrons as a source of illumination, immense magnifications can be obtained if the focusing power of the magnetic lens can be improved to an extent equal to the quality of the lens in the better optical microscopes. At present, the useful magnification with the electron microscope is about 25,000 times. Negatives of pictures made at this magnification, however, have sufficient fine detail to warrant enlargements of 50,000 to 100,000 magnification.

The electron microscope was developed about two years ago and since that time considerable comment has been made about it. By its use the paper chemist is enabled to see a number of papermaking materials and many of their interesting interactions which could not be seen with the ordinary microscope.

Dr. Sears showed approximately 45 slides illustrating the properties of several papermaking materials including fibers, fillers, dyes and size. An excellent discussion by many of those present followed Dr. Sears' talk.

Those who attended included: Ralph Atkins, G. F. DesAutels, N. J. Berger, Harry Bradford, Robert Buss, Fred L. Chappell, Jr., Art Coffin, Harold F. Dewey, Jack Dickson, F. D. Elliott, L. E. Fitzgerald, Charles Gardner, George Greminger, Paul de Guehery, John Halladay, F. R. Hamilton, W. F. Hathaway, J. A. Heenan, R. W. Holden, R. H. Hurst, G. T. Ingling, Myron Kin, A. T. Luey, Hoke Martin, R. T. Mashburn, Elbert G. Milham, Leon H. Mimms, Fredric H. Queck, Marshall Rutz, G. R. Sears, A. L. Sherwood, C. F. Simmerer, Peter A. Talbot, E. B. Taylor, B. M. Thomas, George A. Thompson, Jr., P. L. Ulrich, R. M. Upright, Joe Weber, Arthur Weinland, and Merle Wilkins.

"THERE GOES A MAN WHO HAS JUST SHOWN THIS MILL A WAY TO SAVE REAL MONEY"

● When an Orr Felt representative calls on you, ask him to explain the latest in felt manufacture. Felts are being improved . . . and a new Orr felt, correctly specified, may be the means of saving thousands of dollars a year.

For example, Orr pick-up felts are now finished by a special process, and mills using them are bringing their machines up to full speed within the first hour on Monday morning.

Again, makers of carbonizing and condenser papers were baffled by pin holes in the sheet. Now, Orr has solved their problem, developed a new felt to entirely overcome pin holes.

Such are the many cases of Orr advancement. So don't be surprised if an Orr representative shows you how you can make a profitable change in felts. You, too, may someday say, "There goes a man who has just shown this mill a way to save real money".

ORR FELTS

THE ORR FELT and BLANKET CO.
PIQUA, OHIO

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending April 4, 1942

STOCKS	High	Low	Last
A. P. W.	....	....	....
Armstrong Cork Co.	23¾	23	23¼
Celotex Corp.	7¼	7	7
Celotex Corp., pf.	68½	68	68
Certain-Teed Products Corp.	2	2	2
Certain-Teed Products Corp., pf.	27	25⅝	26½
Champion Paper & Fibre Co.	15⅛	15¼	15⅛
Champion Paper & Fibre Co., pf.	96	96	96
Congoleum Nairn Co.	14	13⅝	14
Container Corp. of America	13½	13⅛	13⅜
Continental-Diamond Fibre Co.	7½	7¼	7⅛
Crown-Zellerbach Co.	11¼	10¾	11¼
Crown-Zellerbach Co., pf.	....	....	....
Flintkote Co.	10½	10⅛	10½
Robert Gair	2	2	2
Robert Gair, pf.	9¼	8⅞	9
International Paper Co.	12⅜	12⅜	12⅜
International Paper Co., pf.	54⅛	52¾	52¾
Johns-Manville Corp.	59⅛	56½	58⅜
Johns-Manville Corp., pf.	125½	125½	125½
Kimberly-Clark Corp.	....	....	....
MacAndrews & Forbes	16½	15⅛	15⅛
MacAndrews & Forbes, pf.	....	....	....
Masonite Corp.	25⅛	25⅛	25⅛
Mead Corp.	7	6¾	7
Mead Corp., pf.	75½	75½	75½
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	9¼	9¼	9¼
Rayonier, Inc., pf.	25	25	25
Ruberoid Co.	19	19	19
Scott Paper Co.	....	....	....
Scott Paper Co., pf.	114⅝	114⅝	114⅝
Sutherland Paper Co.	19¼	18⅝	18⅝
Union Bag & Paper Corp.	8⅛	8¼	8⅛
United Paperboard Co.	3½	3½	3½
U. S. Gypsum Co.	46¼	45	46
U. S. Gypsum Co., pf.	168½	168	168
West Virginia Pulp & Paper Co.	15½	15½	15½
BONDS			
Abitibi Pulp & Paper Co. 5s '53	61	61	61
Abitibi Pulp & Paper Co. 5s '53	72⅝	72⅝	72⅝
Celotex Corp. 4½s '47	97	96½	96½
Certain-Teed Products Corp. 5½s '48	86½	85¾	86
Champion Paper & Fibre Co.	....	....	....
Champion Paper & Fibre Co.	....	....	....
International Paper Co. 6s '55	105	104⅝	105
International Paper Co. 5s '47	104½	103½	103½
Mead Corp.	....	....	....
West Virginia Pulp & Paper Co.	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending April 4, 1942

STOCKS	High	Low	Last
American Box Board Co.	4¾	4	4¾
Brown Co., pf.	....	....	....
Great Northern Paper Co.	....	....	....
Hummel-Ross Fibre Corp.	4½	4⅜	4⅜
National Container Corp.	8½	8½	8½
St. Regis Paper Co.	1⅞	1¾	1¾
St. Regis Paper Co., pf.	110	109	110
Taggart Corp.	3	3	3
BONDS			
American Writing Paper Co. 6s '61	80	80	80

Puget Sound Makes Good Report

Independently audited report of Puget Sound Pulp and Timber Company, for 1941 showed net profit of $1,076,178, after $2,046,931 for Federal taxes, compared with net profit of $795,553 after taxes of $665,000 in 1940.

Net available to common stock was equal to $3.08 per share in 1941, compared with $2.40 in 1940, after tax provisions which equaled $6.26 per common share in 1941 and $2.04 in 1940.

Net sales of $8,379,128 in 1941 compared with $6,022,583 in 1940. Profit before tax provisions amounted to $3,123,109 in 1941, compared with $1,460,553 in 1940.

Federal tax provisions consumed 65.54c of each $1 of taxable income in 1941, were equal to $1.90 for each $1 of profit after tax, and amounted to $3.13 for each $1 paid in common stock dividends, the report states.

Operating on a 24-hour daily basis, the Bellingham plant turned out 143,038 tons of pulp in 1941, compared with 128,136 tons combined production at Bellingham and Anacortes in 1940, and with 94,416 tons in 1939.

Enlarged at an expenditure of $1,510,978, the Bellingham mill produced 42,199 tons more in 1941 than in 1940, 55,461 tons more than in 1939. Daily production averaged 467 tons in December, 1941, compared with 277 tons in February, and a minimum production goal of 170,000 tons for 1942 was announced in the report.

In 1941 the Company added upwards of 4½ billion feet to its timber reserves, through purchases of more than 100,000 acres for a total of $2,146,719. In addition to new construction, $431,479 was expended during the year for plant modernization.

A total of $1,425,563 of working capital employed in 1941 for new construction, plant improvements, timber investments and purchases, debt retirement and other purposes, resulted in $527,537 reduction in working capital.

Lily-Tulip Cup Nets $4.32

The Lily-Tulip Cup Corporation and subsidiaries for 1941, reports a net profit of $820,325, after $997,970 provision for Federal income and excess profits taxes, but before reserve for contingencies. Net is equal to $4.32 each on 189,538 shares. After providing $100,000 for contingencies, there was a balance of $720,325 carried to surplus account for 1941. Net profit for 1940 after $216,448 provision for Federal income and excess profits taxes was $644,119 or $3.39 a share.

Mead Corp. Profits Up

The Mead Corporation in 1941 had net sales of $32,452,148 and 440,602 tons of product, compared with $24,506,440 and 358,948 tons in 1940, the increase in dollar sales being 32.4%, George H. Mead, president, reported in the annual statement to stockholders.

Net earnings of the corporation for 1941 amounted to $2,109,785 after provision for Federal and State income and Federal excess profits taxes, which compared with $1,426,881 earned the year before.

After providing for payment of the regular dividends on the preferred stocks, last year's earnings equaled $2.66 a share on 625,000 shares of common stock, compared with $1.56 each on 619,374 shares outstanding at the end of 1940.

Current assets on Dec. 31, 1941, amounted to $11,628,621 and current liabilities to $3,560,348, which compared with $10,209,758 and $2,277,421, respectively, at close of previous year.

"Established in 1846 as a partnership, of which Daniel E. Mead was a member, this paper manufacturing enterprise was operated through two generations privately until 1905, when it became a publicly owned company under the present management," the

company said. "The business has, therefore, successfully passed through two major wars and now finds itself in the midst of a third, better prepared than ever before."

The corporation with its subsidiary manufacturers a diversified range of printing papers and is the largest producer of tannic acid for use in the leather industry besides being a substantial contributor to the container board industry in its output of brown paper (chestnut board) for corrugating.

Peru Increases Paper Products Duty

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 6, 1942—The Peruvian import duties on a wide range of printed paper, cardboard and manufactures thereof were substantially increased by a recent decree. Goods affected by the increased duties include paper bags and sacks, cardboard boxes, transparent and parchment paper, envelopes and similar products.

The new rates of duty on a few items of interest to American trade, in sols per kilogram, with former rates in parentheses, are as follows: desk calendars, 2.00 (0.80); printed advertising matter, 1.00 (0.20); paper bags, 0.50 (0.20); cellophane bags, 1.50 (0.85); lined cardboard boxes, 1.00 (0.30); cartons for packang butter, 0.75 (0.12); cardboard disks or covers for bottles, 0.70 (0.12)); paper labels, 12.00 (3.00); blank books in ordinary bindings, 3.00 (1.50); blank books for copy presses, 1.40 (0.70); paper in rolls for telegraphs and business machines, 0.50 (0.15); gummed paper, 1.00 (0.50); printed business forms, 10.00 (3.00); printed or perforated paper for meters and recording apparatus, 6.00 (1.00); large sacks or bags, reinforced or not, for use as containers, 0.15 (0.03); paper envelopes, 1.00 (0.70); and printed or decorated envelopes, 5.00 (1.20)

The above rates are subject to a general surtax of 20 per cent of the duty.

Roanoke Paper Co. Amends Charter

ROANOKE, Va., April 6, 1942—The State Corporation Commission has granted an amendment to the charter of the Roanoke Paper Company, Inc., permitting the company to broaden its purpose and increase its maximum authorized capital stock from $30,000 to $250,000. A. L. Hughson was attorney for the company.

Continental Diamond Nets $1.99

The Continental Diamond Fibre for 1941, reports a net income from operations, of $895,860, equivalent to $1.99 a share; for 1940, net income from operations, $559,652, or $1.24 a share.

River Raisin Earns 97 Cents

The River Raisin Paper Company for 1941, reports a net income of $85,312 or 97 cents each on 500,000 capital shares, compared with $69,021 or 14 cents a share in 1940.

Restigouche Profits Up

The Restigouche Company for 1941, reports a net income, Canadian currency, of $356,906, compared with $11,486 in 1940.

It's Cincinnati Transmission Belts' way of helping build production . . . in paper mills . . . in war production plants all over the U. S.

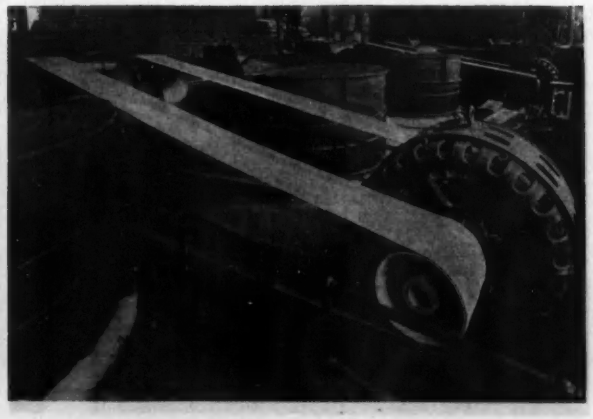
Cincinnati Belts are again proving their ability to meet the "all out" needs of plants for POWER and more POWER.

"Keeping power flowing" . . . smoothly and steadily . . . without interruption . . . twenty-four hours a day is Cincinnnati Transmission Belts' contribution to winning this war thru greater production.

THE CINCINNATI RUBBER MFG. COMPANY
CINCINNATI, OHIO

These "Cincinnati" Products are also doing Important War Duty

CONVEYOR BELTS — RUBBER COVERED ROLLS
HOSE — SHEET RUBBER — MOLDED PRODUCTS



GET THE **MOST** PRODUCTION

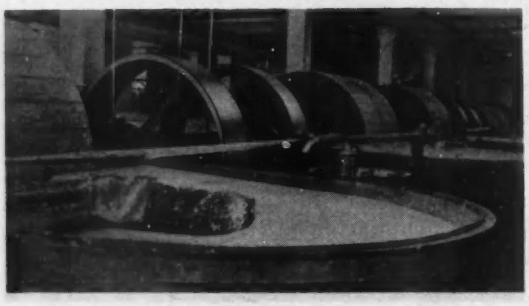
from

present equipment!

• Tannate flat leather belting keeps machines on the job at peak efficiency without trouble or maintenance.

Tannate belts carry practically full load even when damp. They are cemented with waterproof cement and treated to resist moisture.

Of six 20" heavy double Tannate belts on beaters we hear: "After 72 months constant use the first Tannate belt installed is still giving continuous service and shows negligible wear."



A letter from a box board mill states "We have been greatly surprised with the remarkable pulling power these belts possess even when operated very slack on the pulleys. We know of no words to sufficiently describe our satisfied profitable operating experience with your Tannate belts."

Why not give Tannate belting a trial in your mill?

Established 1902

J. E. RHOADS AND SONS

35 North 6th Street, Philadelphia, Penna.

NEW YORK • CHICAGO • ATLANTA • CLEVELAND

STEP UP PRODUCTION with

RHOADS *Tannate*

WATERSHED

LEATHER BELTING

To Discuss Priorities

Priorities, price ceilings and allocations will be discussed at a meeting of the Salesmen's Association of the American Chemical Industry, to be held in the Chemists' Club, New York City, April 16. Speakers will include members of the Chemical Salesmen's Association now serving in Washington with various units and sections of the War Production Board and the Office of Price Administration.

The meeting is scheduled to start at 8 P.M. and will be preceded by dinner at 7 P.M., which will be served at the expense of the Chemical Salesmen's Association. Arrangements and reservations are in charge of Charles F. Alexander, of Seldner & Enequist, Inc., 86 Hausman street, Brooklyn, New York, who is chairman of the entertainment committee of the Association.

Richard A. Thompson Dead

Richard A. Thompson, well known in the pulp and paper industry for a long number of years, died suddenly Sunday, April 5. Mr. Thompson's first connection with the industry was as a reporter on the staff of the PAPER TRADE JOURNAL. Later he was connected with the advertising department of *Paper*, a technical journal, which was later absorbed by the PAPER TRADE JOURNAL. Subsequently Mr. Thompson was connected as a salesman with, among other concerns, the United Paperboard Company, the Seaman Paper Company and his last connection was with the Champion Container Company of Philadelphia. Mr. Thompson leaves two daughters, Mrs. Henry C. Thorne and Miss Sarah A. Thompson. The funeral services were held at Frank E. Campbell, the Funeral Church, Madison avenue and 81st street, New York City, Wednesday forenoon, April 8.

May Get Less Newsprint from Canada

A press dispatch from Washington, under date of April 7, states that "United States production authorities have been notified by the Canadian Government that this country, which is pleading for more aluminum from Canada, must choose between that and a smaller supply of newsprint. The trouble is that there is not enough hydroelectric power for both."

Dexter Receivership Terminated

On March 27, 1942, at a term of the United States District Court, held by Judge Edward A. Conger in New York, an order was made terminating the receivership of Dexter Sulphite Pulp and Paper Company and discharging the receivers. This turns back to the corporation itself all of its assets and the operation as a going concern.

Dexter Sulphite Pulp and Paper Company was formerly owned by the late James E. Campbell and the late Clarence W. Campbell and was well known in the trade as one of the old-established sulphite mills and paper mills. Upon the death of the two Mr. Campbell's control of the corporation passed to the hands of creditors and was operated by them without representation on the board by stockholders for a period of years, which operation was deemed to be unsuccessful and these officers of the corporation decided to cease business and started to liquidate the corporation.

(Continued on page 41)

To Meet April 17

The Spring Meeting of the Southeastern Division, the American Pulp and Paper Mill Superintendents Association, Inc., will be held April 17-18 inclusive, at the Jefferson Hotel, Richmond, Va.

The meeting will be opened with an address of welcome by Gordon B. Ambler, Mayor of Richmond. Scheduled for the morning meeting are the following: "Defense in Industrial Plants," by Frank G. Lauthan, secretary-treasurer, Virginia Manufacturers Association; and "The Coe Drainator on Paper Machine Dryers," by C. W. St. Clair, The Coe Manufacturing Company.

Following, a business meeting will be held, with a joint luncheon at the Jefferson Hotel. In the afternoon, golf will be the attraction at the Country Club of Virginia, or paper mill visitations in local and nearby mills, with a tour of the Dupont rayon and cellophane plant.

Dinner will be served at the Jefferson Hotel. The toastmaster will be J. F. Ryland, vice-president, Standard Paper Manufacturing Company. The guest speaker will be Dave R. Satterfield, Jr., Congressman from the Third District of Virginia.

A dance will be the final event of the opening day.

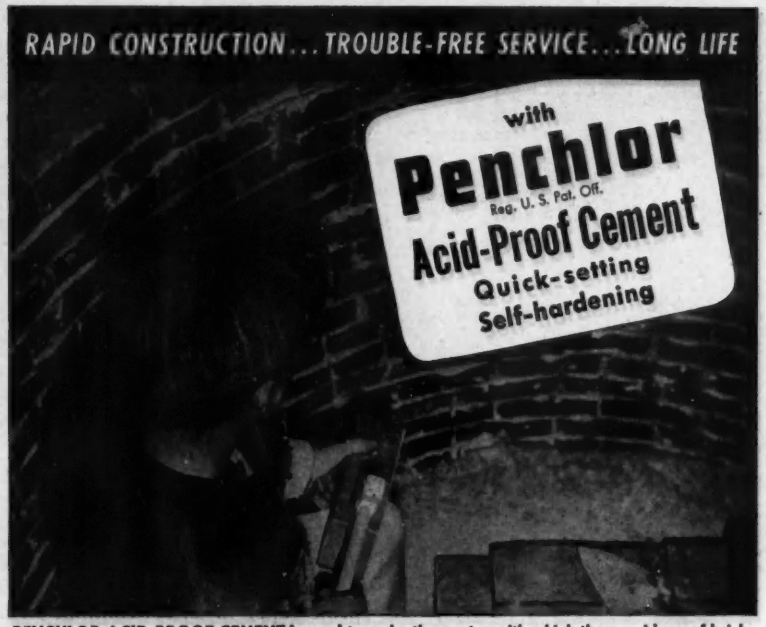
The program for April 18 will open with a business meeting in the morning. Among the important subjects to be discussed are the following: "Pulp and Paper Industry Under Priorities," by John F. Darrow, American Paper and Pulp Association; and "Manufacturing of Wires," by Smith McLandress, Appleton Wire Works, Inc. A final joint luncheon will follow at the hotel, at which Oscar Stamets, national chairman, will be master of ceremonies.

On April 17, the ladies program will include the joint luncheon, a sightseeing trip through Spring Gardens and other historical points, or a bridge tournament in case of bad weather.

Members are urged to make reservations as early as possible.

Customs Cases

Two cases on the docket of the United States Customs Court at Detroit involve importations of newsprint weighing from 35.1 to 38.2 pounds, and bulking from 4.3 to 4.7 points in thickness. The paper is claimed to be duty free as standard newsprint but was classified for duty as printing paper.



PENCHLOR ACID-PROOF CEMENT is used to make the mortar with which these acid-proof bricks are being laid in lining a tank to store hot dilute sulphuric acid at the chemical by-products plant of the Chesapeake-Camp Corp., Franklin, Va. Construction Contractors: A. Lynn Thomas Co., Inc., Richmond, Va.

Here is another installation where *Penchlor Acid-Proof Cement* will prove its worth in years of dependable service. This quick-setting sodium silicate cement was chosen because of its proven record of highly satisfactory service under severe acid conditions . . . a record that includes successful application in most of the important chemical plants throughout the United States, in steel mills, in paper and pulp mills, oil refineries and smelting plants.

With time a vital factor in new construction, the quick-setting and self-hardening qualities of Penchlor Acid-Proof Cement are a greater advantage than ever. There need be no delays in putting brick-lined equipment into service.

If your conditions require a corrosion-proof cement with unusual strength and exceptional resistance to abrasion, use one of our resin cements, such as *Asplit* for conditions which are always acid—or *Causplit* for conditions alternately acid and alkaline. You will find these easy to handle and capable of withstanding a wide range of corrosive conditions at temperatures up to 350 degrees F.

Long experience in our own chemical plants in handling acids and alkalis makes it possible for us to put seasoned engineering service at your disposal—without obligation, of course. Write us fully. Or if you prefer, use the coupon below.

PENNSYLVANIA SALT MANUFACTURING COMPANY
Chemicals
1000 Widener Building, Philadelphia
New York • Chicago • St. Louis • Pittsburgh • Wyandotte • Tacoma

PENNSYLVANIA SALT MANUFACTURING COMPANY
Dept. PTJ, 1000 Widener Bldg., Philadelphia, Pa.
I want information on corrosion-resistant cements for use in linings to handle

Please send me a free copy of your booklet
Booklet No. 3 on "Penchlor Acid-Proof Cement"
Booklet No. 5 on "Asplit and Causplit Cements"

NAME
COMPANY
ADDRESS

Paper Bids

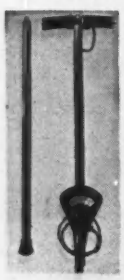
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 8, 1942 —Government Printing Office has received the following bids for 55,300 pounds of 25% rag, 22 x 34 white mimeograph paper; Cauthorne Paper Company, 10.42 cents; Butler Company, 10.09 cents; Graham Paper Company, 10.15 cents; Bradner Smith Company, 10.15 cents; Old Dominion Paper Company, 11.03 cents; Barton, Duer & Koch Paper Company, 11.95 cents; Paper Corporation of U.S., 10.65 cents; Mudge Paper Company, 11.66 cents; Stanford Paper Company, 10.5 cents; Whitaker Paper Company, 11.48 cents; R. P. Andrews Paper Company, 10.67 cents (15,000 pounds only); and Walker Goulard Plehn Company, 10.49 cents.

For 14,000 pounds of 50% rag, 22½ x 28½ yellow index paper; Whitaker Paper Company, 16.9 cents; Barton, Duer & Koch Paper Company, 16.38 cents; Paper Corporation of U.S., 16.4 cents; and Walker Goulard Plehn Company, 17 cents.

For 90,000 pounds of 25% rag, 8 x 10½ white bond paper; Walker Goulard Plehn Company, 14.79 cents; Birmingham & Prosser Company, 13.095 cents; Old Dominion Paper Company, 15.994 cents; R. P. Andrews Paper Company, 14.09 cents; Whitaker Paper Company, 13.52 cents; Paper Corp. of U.S., 14.2 cents; Central Ohio Paper Company 15.25 cents; Bradner Smith & Company, 13.65 cents; and Collins Company, 12.77 cents.

PREVENT REJECTS WHERE YOU CAN



With changes in pulp, restrictions of chemicals, and experienced workers being called to the service, the paper manufacturer faces a problem to keep his production up to standard. By insisting upon a constant check and maintenance of proper roll temperatures in the drying chain he can go a long way in preventing spots, cockle, curling and blisters. The Cambridge Pyrometer is the instrument used for checking roll temperatures in many prominent mills.

Write for bulletin 194S.

The Cambridge is made in a hand model and with the extension attachments to reach those hard-to-get-at places.

CAMBRIDGE INSTRUMENT CO., INC.
3732 Grand Central Terminal, New York, N. Y.

CAMBRIDGE
SURFACE PYROMETERS

Free Newsprint

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., April 8, 1942 —Newsprint in rolls may now be imported into El Salvador duty free by a recent legislative decree according to a report to the Department of Commerce.

The duty free entry of newsprint is intended as an aid to newspaper publishers, who have been adversely affected by the rise in price. Newsprint paper in sheets continue to be dutiable at the rate of $1.20 per 100 gross kilograms.

Paper Doubles Quota

Alex Calder, president of the Union Bag and Paper Corporation and chairman of the paper committee of the Greater New York Fund 1942 campaign, announced at a recent luncheon meeting of the committee men at the University Club, that the committee had accepted a 100% increase of the industry's last year's quota.

"Only by reaching this goal," Mr. Calder said, "will our industry assume its proper share of the community welfare load. We are going to make a whirlwind drive starting April 6 ending with a big luncheon at the Barclay Hotel, April 13, under the auspices of the Salesmen's Association of the Paper Industry."

Mr. Calder pointed out that the industry occupied the seventh largest position in the nation, ranking equally with the oil, metals, foods and tobacco industry. "The paper industry donations go to worthy projects and generously help in the support of the 400 voluntary welfare and health agencies for which the Fund is conducting its drive," said Mr. Calder.

Assisting Mr. Calder in his blitz campaign, are: Norma Bearsley, of the Union Bag and Paper Corporation; Jonathan O. Bulkley, president of the Bulkley, Dunton Pulp Company Inc.; Paul H. Bull, of the Pejepscot Paper Company Inc.; Samuel Dowman, of Gottesman & Co.; Arthur Ericsson, of the Riegel Paper Corporation; Al Forsythe, of Fraser Industries, Inc.; D. Samuel Gottesman, president of Gottesman & Co.; Alan B. Helfrich, of the St. Regis Paper Company; Thomas Hodgson, of the Union Bag and Paper Company; Harry A. Hughes of Pierce & Pierce, Ltd.; A. R. Melker, of A. R. Melker Company; Harold Moley, Edward D. O'Brien, of the Van de Water Paper Company; Charles Peto, of the Hammermill Paper Company; W. L. Raymond of the P. H. Glatfelder Company; C. E. Taylor of Gaylor Container Corporation; Harry P. Vogt, of the Howard Publishing Company; Fred W. Leonard, of Forest Paper Company Inc., E. F. Miles of Crocker-McElwain Company, and Gustav Indruk, of Tappen & Indruk.

Rubber Service

The last two of the series of six pamphlets on the subject of "How to Get the Most Service Out of Industrial Rubber Products" has been published by the B. F. Goodrich Company, Akron, Ohio. Titles of these pamphlets are No. 5 "Rubber Hose" and No. 6 "Mats and Matting."

Like the first four of the series, these are furnished free upon request to the company. Titles of the original quartet of pamphlets are: No. 1 "Transmission Belting", No. 2 "Conveyor Belts", No. 3 "V-Belt Drives" and No. 4 "Belt Salvage." Copies of these also can be obtained by writing the company.

Like their predecessors the two new pamphlets treat their subjects in clear, understandable language so that any employee of plant or office under whose jurisdiction rubber products fall can easily understand the methods for conserving the precious material now restricted because of the war.

The company suggests that those who receive the pamphlets make copies of the text for distribution among their foremen and maintenance men, or request a sufficient number of copies to supply them. If no number is specified, only one copy will be sent.

On Celotex Board

Chris L. Christensen, Dean of the University of Wisconsin's College of Agriculture, has been elected a director of the Celotex Corporation. He filled a vacancy caused by the resignation of L. R. Boulware, who entered government service in Washington.

Face Severe Penalties

Willful violators of rationing orders and rationing regulations issued by the Office of Price Administration now face direct prosecution and severe penalties under provisions of the Second War Powers Act, 1942, Acting Price Administrator John E. Hamm warned.

The Act, which became effective last Saturday when signed by President Roosevelt, provides a maximum penalty of $10,000 fine and imprisonment for one year for willful violation of priority orders of the War Production Board or of rationing orders or regulations of OPA, whether already in effect or issued in the future.

Mr. Hamm disclosed that OPA, working in close cooperation with the Department of Justice, has adopted a comprehensive plan of action for investigation and criminal prosecution of those persons who flout the rationing rules. This plan will be pursued vigorously, he said, with the object of making illicit trafficking in rationed articles an expensive business.

"Until passage of the Second War Powers Act, enforcement of the rationing program has been severely handicapped by the fact that the law provided no criminal penalties for even the most flagrant violations of rationing requirements," Mr. Hamm stated. "Dealers who had made misrepresentations to the government of facts concerning their supplies could be prosecuted for such misrepresentation under existing statutes, but the open and notorious violator could be reached only by suit to enjoin further violations.

"Those who connive to get more than their fair share of any rationed article are equally as guilty as those who traffic illicitly in rationed goods for profit.

"Public condemnation of these practices now will be supplemented by criminal prosecution."

Appleton Embossing Rolls are built in a full selection of fillings to fit any converting or finishing application, for either embossing or backing rolls. Accuracy of machine adjustment and roll construction is essential in the embossing process. Every Appleton Roll is a true precision unit, engineered to installation specifications, to meet definite production requirements.

APPLETON EMBOSSING ROLLS

Heads Eastern Corp.

Clyde B. Morgan was re-elected president of the Eastern Corporation, operating pulp and paper mills at South Brewer, Orono and Lincoln, Me., at a meeting of the directors of that corporation held Monday at the plant in Squth Brewer following the annual stockholders' meeting.

Other officers, all re-elected were Charles G. Paine, vice president and general manager; Albert B. Pomeroy, treasurer; E. Albert Doran, assistant treasurer; and Norman B. Whittier, comptroller.

A Plastic Gasket

Plasket, an allied product of Lubraloy, is manufactured by the Lubricated Metal Products Corporation, 215 West Illinois street, Chicago, Ill. It is a new type of plastic material, impregnated with a non-volatile and a non-dry-out lubricant, applied to seal flange joints and fittings.

Plasket remains plastic, making it unnecessary to heat a joint to unscrew, as joints come apart easily without forcing. The application of Plasket is simple. A thin layer is spread over the threads or parts to be joined, with a putty knife or with the hand. The manufacturer states Plasket is proof against vibration, expansion and contraction, and is not affected by steam, water, gas, acids, oil, tar or other fuels.

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

Vol. 114 April 9, 1942 No. 15

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

UNITY IN WARTIME

National wartime policies of American business and industry will be the leading topic of discussion at the thirtieth annual meeting of the Chamber of Commerce of the United States, to be held in Chicago April 27-30 inclusive. "Let's get it done!" will be the main theme and it will be the motivating spirit and determination of more than 3,000 delegates scheduled to attend this important major annual convention of business men and industrialists. The delegates will represent more than 1,700 chambers of commerce, and trade industrial associations, counting a combined membership of more than a million manufacturers, merchants, miners, millers and other business men located in every part of the country. Questions submitted by the National Chamber's member organizations as a basis for action by the meeting's policy-forming Resolutions Committee embrace more than fifty vital subjects relating to the war emergency.

It is thus evident that the policy proposals, coming from every part of the country, are a gauge indicating that American business and industry are standing whole heartedly united behind an all-out productive effort. It also shows that business men are dissatisfied with the federal conduct of activities not related to the war program. Calling for more efficient and vigorous prosecution of the war effort on the home front, several organizations propose that the initiation or extension of broad so-called social reforms by the government be adjourned for the duration. It is urged that activities of government agencies and departments calculated to harass industry and divert attention and abilities of industrial management from the problems of military production should be dropped. Maximum production for war is the theme of many proposed declarations. The National Chamber, one organization holds, should adopt a resolution that it will use every possible means to obtain complete effort of business men in achieving and maintaining the earliest possible maximum production of war essentials. The proposal adds that the resolution should specify this cooperation to be unqualified and not conditioned upon the attitude of labor, agriculture or any other group.

Emphasis is placed in the proposals on the immediate need for curtailment of non-essential federal expenditures. Several organizations recommend that every American community should exert its influence in favor of reductions and themselves refrain from special requests for new expenditures for any purpose. A declaration that the Wage-Hour Act should be amended to permit lengthening of the 40-hour week is proposed by several organizations. As one organization expresses the proposal, the Wage-Hour Act was intended to spread work and increase opportunities for employment during a period of great unemployment. It should now, in view of the need for more working hours, be amended to permit employees to work up to 48 hours a week at regular rates. Among other proposals of great importance, are the preservation of the continued existence of many small manufacturers. The great bulk of manufacturing enterprises are relatively small, one proposed declaration points out, employing less than 100 persons. Every reasonable effort, it adds, should be made by all agencies, public and private, to spread the available volume of military production among the largest possible number of industries.

Addresses and discussions at the meeting will revolve around the central consideration of expediting war production, with adjustments of business and industry to emergency conditions also holding the close attention of the nation's business leadership. As presently planned, each day of the meeting will be featured by an over-all topic for discussion and analysis by outstanding war industralists; federal war-agency executives, military and civil; labor and agricultural representatives. Thus, the principal topic for one day of the meeting is listed as "production", another "organization", a third will be occupied with the problems of "wartime adjustments", and the final day on the program is headed, "the forward look". On production day, discussions will center on unity for action, mobilizing business for war, supply the home front, assuring essential materials for war and expediting war production. "Our world economic position", will also be discussed by a forum composed of private and federal foreign trade authorities. On the day in which wartime adjustments are to be considered, the featured subjects scheduled include price controls and rationing, management and labor, retailing and wholesaling in wartime, taxation, and transportation problems of the emergency.

In a statement by Albert W. Hawkes, president of the Chamber of Commerce of the United States, approved by the Chamber's board of directors on March 20, it was declared that, "To win this war we must

have unity of purpose and practical, voluntary cooperation. Genuine unity can be developed only by understanding and fair dealing on the part of all, and voluntary cooperation emanates from justice in our human relations. The issues confronting us are so important and momentous that we must not fail to give them first consideration. . . This is labor's war, capital's war, everybody's war. We are all facing possible enslavement, the destruction of our heritage of freedom, and our American way of life. The successful conduct of this war demands our personal devotion to the principles of liberty, regardless of cost. It also requires almost superhuman production of the implements of modern war. This is a war of machines as well as men. It is a war of production to protect life and preserve liberty. Anything that impedes the maximum required production on a fair cost basis to the limit of the capacity of a united people cannot hope for the support of public opinion."

In conclusion, Mr. Hawkes said in part: "Americans must learn by the lessons of France and other countries, which failed because their people wasted their efforts in internal quarrels between selfish groups rather than preparing themselves for defense against external enemies. Things are impossible only to those who are willing to accept failure for success; only to those who refuse to accept as true the fact that God supports and guides those who recognize justice in human relations and believe that right must be made to prevail over wrong. We must recognize these things on time, to avoid repentance at leisure."

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1942		Corresponding Weeks, 1941	
February 21	103.6	February 22	90.4
February 28	103.5	March 1	90.5
March 7	102.3	March 8	91.0
March 14	101.3	March 15	91.8
March 21	103.0	March 22	91.7
March 28 (Prelim.)	*103.0*	March 29	94.5

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1941	85.6	89.7	92.2	96.0	98.7	99.3	94.2
1942	103.8	103.4	*102.3*	...	...	...	...

Year	Avg.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1941	101.0	99.7	105.2	106.2	100.4	97.4
1942	...	...	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941	1942
Year to Date	67.4	75.9	89.3	66.8	79.4	85.9	88.9	*103.2*
Year Average	69.9	80.4	79.8	71.5	83.4	85.6	97.4	....

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	81	82	83	84	88	86	94	94	99	98	93	88
1942	102	*101*	..	..	..	..	..	..	..	..	..	..	..

Week ending Feb. 21, 1942—102
Week ending Feb. 28, 1942—100
Week ending Mar. 7, 1942—101
Week ending Mar. 14, 1942—100
Week ending Mar. 21, 1942—101
Week ending Mar. 28, 1942—*101*

† Per cents of operation based on "Inch hours" reported to the National Paperboard Assn.

EXPORTERS
OF AMERICAN PULP

TO
BRITAIN
SOUTH AMERICA
AND ALL WORLD MARKETS

LYDDON
& COMPANY
(AMERICA) INC.

51 EAST 42ND STREET
NEW YORK CITY

what have starches and gums
to do with
winning this war?
Planes and tanks are no stronger than the fighting mettle of the men who control them. But their crews require more than mechanized equipment - the full support of the army of officials and civilians who use vast paper tonnage in their war efforts.
That's where starches and gums come in.
Paper made far behind the battlefronts must have the highest quality that can be produced under war conditions. That's why Stein-Hall . . as never before in its 76 years of uninterrupted history . . is keyed to the production of the best special starches and gums it is possible to devise for specific paper manufacturing needs. Our technical facilities are at your service . . for the duration and afterward.

STEIN, HALL & COMPANY, INC.
285 MADISON AVENUE NEW YORK
STEIN, HALL MFG. COMPANY
2841 S. ASHLAND AVENUE CHICAGO

Founders: STEIN-HALL RESEARCH FELLOWSHIP AT THE INSTITUTE OF PAPER CHEMISTRY, APPLETON, WIS

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Cotton Pulps. II.

Modification by Oxidizing and Hydrolyzing Agents*

By D. M. Musser [1] and H. C. Engel [1]

Abstract

Some papermaking properties of cotton pulps degraded by acid and oxidizing agents have been studied. Reduction of the cuprammonium specific viscosity of cottonseed hull fiber to a value below 10 facilitates beating. Linters and lint cotton would probably behave similarly. With pulps degraded to the same cuprammonium viscosity, the physical properties of handsheets appear to have been affected less by oxidizing agents than by acids. These effects are discussed in relation to fiber structure.

A paper *(1)* by Musser and Engel described the influence of cuprammonium viscosity upon the beating and sheet properties of raw cotton fibers degraded by alkaline hypochlorite solutions. This work has now been extended to include degradations effected by other oxidizing and hydrolyzing agents.

Chemical treatment of pulps preparatory to beating has been examined by several different investigators as a means of decreasing the time required for development of the maximum strengths in the beater. Schwalbe *(2)* reported that overbleaching or acid-treating the pulp greatly accelerated the beating process. Minor *(3)* found that acids or acid-forming salts increase mucilage formation of sulphite pulps and reduce the time necessary to reach a given slowness. Bursting tests upon sheets made from acid-treated pulps showed a decided improvement in strength over those formed from untreated pulps. Hisey and Koon *(4)*, investigating the effect of pH in bleaching, concluded that the best sheet strengths of sulphite pulps are obtained under acid conditions of bleaching. Clibbens and Ridge *(5)* showed that the maximum rate of oxygen consumption of cotton cellulose in hypochlorite solutions occurs at neutrality. Obermanns *(6)* observed that overbleaching of rag stock expedites beating and weakens the strength qualities of the sheet. Knecht and Thompson *(7)* claimed that by the use of permanganate a high degree of oxidation was obtained without degradation of the cellulose. Doree and Healey *(8)* studied the properties of cotton cellulose oxidized with permanganate of graded pH values and found that pH 9 marks a transition: on the acid side, the product has reducing properties; on the alkaline side, it is characterized by high methylene blue absorption.

The present paper compares some papermaking properties of cotton pulps with progressive degradations by aqueous permanganate, neutral hypochlorite, and hydrochloric acid solutions.

Cooking and Bleaching

The procedure employed in preparing the pulps and evaluating the properties of the handsheets was essentially the same as that described in the preceding paper *(1)*.

Because of the difficulties encountered in ball-milling lint cotton and linters, all runs were made with cottonseed hull fiber. The hull fiber pulps produce lower paper strengths but respond to chemical treatment more readily than linters or lint.

The raw fiber was freed of hull fragments, waxes, and other impurities by digestion with 10% sodium hydroxide under steam pressure at 125 deg. C.

Bleaching with hypochlorite was conducted at 25 deg. C. and at a consistency of 10%. The solution was adjusted at the start to pH 7. The chlorine content was varied to give the desired cuprammonium viscosities.

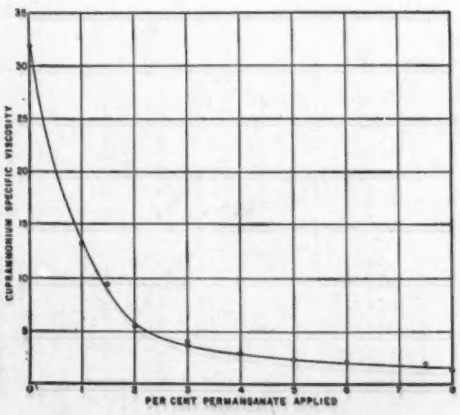


FIG. 1
The Change in Cuprammonium Specific Viscosity with Varying Amounts of Permanganate Applied for One Hour at 25 Deg. C.

* Contribution from the Multiple Industrial Fellowship of the Cotton Research Foundation.
[1] Mellon Institute, Pittsburgh, Pa.

A series of pulps was prepared with aqueous potassium permanganate as oxidant. The kier-boiled hull fiber was subjected to the oxidizing solution at room temperature for one hour, treated with sodium sulphite solution, and then washed thoroughly in a centrifuge. The change in cuprammonium specific viscosity of the pulp with different amounts of permanganate applied at a consistency of 10% is shown in Fig. 1.

Acid degradation of pulps was accomplished with a 20% solution of hydrochloric acid at 25 deg. C. The rate of viscosity change with time of treatment is shown in Fig. 2.

Discussion of Results

Previous work in this laboratory demonstrated that the beating of cotton fibers is hastened by bleaching with alkaline hypochlorite solutions to a cuprammonium specific viscosity value below 10. Large variations in viscosity above 10 had but slight influence upon the beating time. The present study was therefore limited to pulps of relatively low cuprammonium viscosities.

In Tables I, II, and III are recorded data on cottonseed hull fiber pulps degraded with aqueous permanganate, neutral hypochlorite, and hydrochloric acid solutions, respectively. The maximum strength factors of the pulp at a given viscosity are presented, together with the standard drainage seconds and the time required to beat the pulps for development of their maximum values. The physical properties of the plain, kier-boiled hull fiber are shown as blank run in Table I.

It is seen from the experimental values given in Tables I and II that degradation of cotton fibers by permanganate and hypochlorite solutions follows practically the same course. The beating time based

TABLE I.—PROPERTIES OF COTTON PULPS DEGRADED WITH AQUEOUS PERMANGANATE

Sample	Cuprammonim specific viscosity	Max. tear factor	Hours of beating to develop max. tear	Max. burst factor	Hours of beating to develop max. burst	Max. breaking length	Hours of beating to develop max. breaking length	Seconds drainage at max. breaking length
Blank	31.8	90.3	5.0	20.0	8.5	2450	8.5	13.0
20	9.4	88.3	5.0	17.9	8.5	2400	8.5	16.0
22	5.4	84.5	5.0	18.0	7.0	2450	7.6	10.0
25	4.1	87.2	5.0	17.6	6.5	2400	7.0	10.0
28	1.9	69.8	2.5	15.7	5.5	2420	5.5	9.0

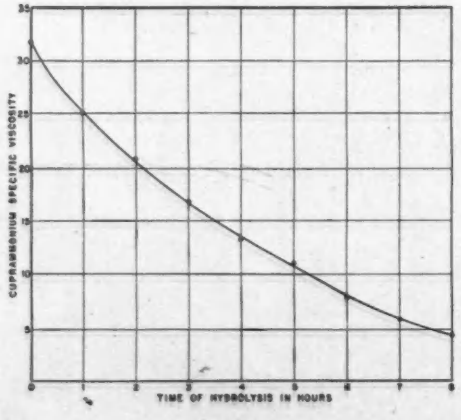


FIG. 2

The Variation of Cuprammonium Specific Viscosity with Time of Hydrolysis by 20% Hydrochloric Acid at 25 Deg. C.

TABLE II.—PROPERTIES OF COTTON PULPS BLEACHED WITH NEUTRAL HYPOCHLORITE

Sample	Cuprammonim specific viscosity	Max. tear factor	Hours of beating to develop max. tear	Max. burst factor	Hours of beating to develop max. burst	Max. breaking length	Hours of beating to develop max. breaking length	Seconds drainage at max. breaking length
31	14.6	91.6	5.0	18.5	8.5	2430	8.5	15.0
32	8.2	82.0	5.0	17.2	8.0	2450	8.0	13.0
34	7.3	84.0	5.0	18.2	8.0	2460	8.0	11.0
35	3.9	82.0	4.0	17.7	7.0	2440	7.0	9.0
37	1.3	66.6	2.0	14.9	3.5	2280	3.5	8.5

TABLE III.—PROPERTIES OF COTTON PULPS DEGRADED WITH HYDROCHLORIC ACID

Sample	Cuprammonim specific viscosity	Max. tear factor	Hours of beating to develop max. tear	Max. burst factor	Hours of beating to develop max. burst	Max. breaking length	Hours of beating to develop max. breaking length	Seconds drainage at max. breaking length
42	7.3	73.2	4.0	16.8	7.0	2380	7.5	12.0
43	6.4	71.9	4.0	16.6	7.0	2240	7.0	8.0
44	5.1	70.7	3.5	15.2	6.5	2260	7.0	8.5
45	4.6	68.5	3.0	14.4	6.0	2090	6.0	8.0

on the maximum burst factor, for example, does not vary greatly at a given viscosity for the two differently treated pulps. Similar data were observed for the strength properties of the handsheets.

Comparison of the test values of oxidized cotton pulps with those found for acid-treated fibers reveals significant differences. At a given cuprammonium viscosity the beating time is less for the acid-degraded sample. The maximum breaking length and burst factor likewise tend to be somewhat lower, but the tear factor is markedly inferior to that shown by the oxidized pulps. In the very low viscosity range these differences become less apparent.

Farrow and Neale *(9)* have reported that the breaking load of cotton fibers of the same cuprammonium viscosity as prepared by acids and oxidizing agents is greater for the oxidized fiber. Since the tear factor is probably dependent largely upon individual fiber strength *(10)*, a smaller value might therefore be expected from an acid-modified pulp. The breaking length and burst factor, on the other hand, are probably more a measure of the structural strength of the sheet than of the individual fiber strength; hence, these properties suffer comparatively smaller change as degradation proceeds.

According to more recent conceptions, cellulosic fibers are composed of long molecular chains, arranged in parallel order, which pass through alternate crystalline and amorphous regions *(11)*. Modification of the fibers by acids or oxidizing agents is assumed to occur primarily in the amorphous region. An indication of the extent of the modification in a given sample is obtained through measurement of the cuprammonium viscosity.

Oxidative or hydrolytic attack of the cellulose fiber progressively shortens the chain-molecules, opens the fiber structure, and causes fiber fragmentation *(12, 13)*. Accompanying characteristics include loss in tensile strength, increased fragility and ability to pack into smaller space. The summation of these factors contributes to diminish resistance to mechanical action.

This physical interpretation is further supported by the fact that mercerized hull fiber, which shows pronounced resiliency relative to highly degraded pulps, is more difficult to beat than plain, unmercerized hull fiber. Typical data on the drainage time developed by the two pulps at various beating times

TABLE IV.—DRAINAGE DATA ON MERCERIZED AND UNMERCERIZED COTTON PULPS

Beating, hours	5.0	6.0	7.0	7.5	8.0
Drainage seconds for unmercerized cotton	7.0	7.5	14.5	18.5	90.0
Drainage seconds for mercerized cotton	7.0	7.0	7.0	7.0	7.0

are given in Table IV. The unmercerized fibers are well "hydrated" after 7 hours of beating, but the more pliant, mercerized pulps show no signs of slowness after 8 hours of beating. These observations substantiate the experiments reported by Jayme *(14)*, in which correspondingly lower beating degrees were found for pulps pretreated with increasing concentrations of cold sodium hydroxide solutions.

The foregoing results corroborate previous work in that beating of cotton pulps is accelerated by reduction of the cuprammonium specific viscosity to a value less than 10. On a comparable viscosity basis, the physical properties of the sheets decrease to a lesser extent with oxidizing agents than with acids.

Literature Cited

1. Musser, D. M., and Engel, H. C., *Paper Trade J.* 113, no. 2, 13 (1941).
2. Schwalbe, C. G., *Papier-Fabr.*, 25, 481 (1927).
3. Minor, J., *Ind. Eng. Chem.* 13, 131 (1921).
4. Hisey, W. O., and Koon, C. M., *Paper Trade J.* 103, no. 6, 86 (1936).
5. Clibbens, D. A., and Ridge, B. P., *Shirley Inst. Memoirs* 6, 1 (1927).
6. Obermanns, H. E., *Paper Trade J.* 103, no. 7, 109 (1936).
7. Knecht, E., and Thompson, L., *J. Soc. Dyers Colourists* 36, 251 (1920).
8. Doree, C., and Healey, A. C., *J. Soc. Dyers Colourists* 49, 290 (1933).
9. Farrow, F. D., and Neale, S. M., *Shirley Inst. Memoirs* 3, 67 (1924).
10. Morgan, H. W., *Paper Trade J.* 97, no. 24, 35 (1933).
11. Kratky, O., *Angew. Chem.* 53, 153 (1940).
12. Olsen, F., and Aaronson, H. A., *Ind. Eng. Chem.* 21, 1178 (1929).
13. Nickerson, R. F., *Ind. Eng. Chem.* 33, 1022 (1941).
14. Jayme, G., *Paper Maker* 95, TS3 (1938).

Chinamen Displace Japanese

Chinamen are being taken from the Fraser Valley and interior British Columbia areas to work in pulp mills in the province in place of Japanese according to statements made at the recent convention of the Canned Foods Association of British Columbia.

It was mentioned by the canners that the crop situation in British Columbia was extremely serious owing to a scarcity of labor. It was pointed out that not only had the Japanese been removed from this territory, as a result of restrictions from Ottawa which moved them out of the coastal defense zone, but in addition Chinese were being drawn from the interior of the province and the Fraser Valley to fill the jobs in pulp plants formerly held by Japanese.

It was reported that the basic minimum wage for Japanese at the Ocean Falls plant, for example, was 70 cents per hour and that as this was more than Chinese were receiving in agricultural pursuits, they were turning to the more remunerative occupations.

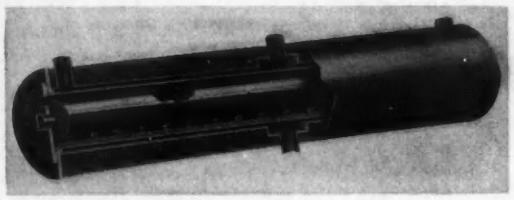
Angier Sales Corp. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 30, 1942—The Angier Sales Corporation, 50 Fountain street, Framingham, Mass., has been incorporated to manufacture and sell waterproof paper products, with capital of $10,000. There are 2,000 shares, $5 each. The president is Robert J. Holmes; treasurer, Marion F. Wright, 7 Gove street, Boston, and the third incorporator, Alfreda W. Crowell.

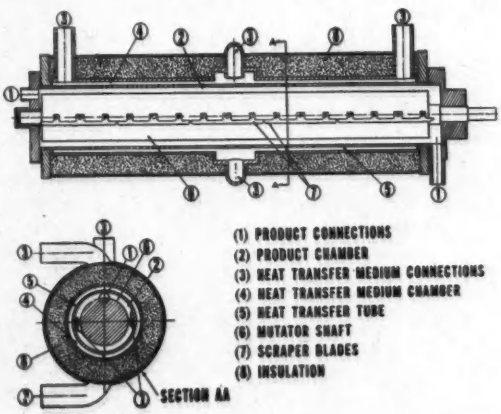
Votator Method of Heat Transfer

A new booklet describes a unique and highly efficient mechanism for heating or cooling of liquids and viscous materials, which also offers mixing, emulsifying or aerating simultaneous with heating or cooling is announced by the Girdler Corporation, Votator Division, Louisville, Ky.



VOTATOR HEAT TRANSFER UNIT

The unit is known as the Votator. Outstanding features are: (1) Heats or cools in seconds, by a patented principle of passing a very thin film of product over a relatively large heat transfer surface. (2) Continuous rapid flow of product thru unit. (3) Uniform temperature, accurately controlled. (4) A



DIAGRAMATIC DRAWING OF VOTATOR

completely closed system. (5) Simplicity of design, which permits easy cleaning and enables unit to be connected into virtually any processing system. (6) More economy—due to increased speed and efficiency of heat transfer, use of less heat transfer medium, and facilities for simultaneous mixing. The Votator is available in standard sizes and designs. Helpful charts, diagrams, cross sections, and reference tables are included in the booklet. For a copy of booklet on the Votator Heat Transfer Unit, Address the Girdler Corporation, Votator Division, Louisville, Ky.

Ft. Wayne Corrugated Changes

Harold F. Treen, former vice-president, secretary and general manager of the Ft. Wayne Corrugated Paper Company, Ft. Wayne, Ind., has been elected president and treasurer to succeed Frank P. Koester, named chairman of the board. William Waterfield and Robert P. Getty have been named new vice-presidents, with Mr. Waterfield in charge of sales and Mr. Getty of manufacturing.

Critical Materials Priorities*

By James L. Ritchie[1]

In his address to Congress on the state of the Union, the President outlined the nation's war production aim. The goal set is as follows:

	1942	1943
Combat Planes	45,000	100,000
Training Planes	15,000	25,000
Tanks	45,000	75,000
Antiaircraft Guns	20,000	35,000
Merchant Shipping (deadweight tons)	8,000,000	10,000,000

Attainment of this goal will require the best of the nation's resources, facilities, and manpower. The Priorities system is designed to make *the best* available.

Army and Navy Preference

The theory of priorities is that in the distribution of critical materials, war needs shall be met first and in full, essential civilian needs next, and nonessential and luxury needs last. An equitable distribution is not contemplated. The very word "priorities" abnegates the idea of equity.

The present priority system has evolved gradually from simple beginnings. The first type of preference rating to be assigned was the army and navy preference rating certificate. This rating could be assigned by any army and navy contracting officer to any supplier of items listed on the army and navy critical list. This list of critical materials was revised monthly and kept current. The Army and Navy Preference Rating Certificate was extendable in character, which meant that any supplier of an item on the critical list that received an army and navy certificate could extend it to a supplier for the purpose of obtaining materials to be physically incorporated in the product which he was manufacturing. A subsupplier in turn could likewise extend it for the same purpose.

There have been recent changes in the status of army and navy preference rating certificates. Of major importance is the fact that the army and navy critical list has been abandoned, and army-navy contracting officers are now empowered to extend rating on any direct purchase, irrespective of any critical list. This means that at the present time, any army and navy preference rating certificates, served on a paper supplier, are valid and that such orders must be filled in preference to unrated business. There is, however, a proposal presently under consideration contemplating the issuance of a negative critical list. Items included in this negative critical list will not be subject to preference ratings and neither the army or navy nor any other agency will have authority to extend ratings on items so listed. If the proposed negative list is approved, it is expected that pulp and paper will be included.

It is worthy of note that *extensions* of Army and Navy Preference Rating Certificates are only valid when they relate to materials that are to be physically incoroporated in the product to be delivered directly to the army and navy. Thus, an airplane manufacturer has no right to extend an army or navy Preference Rating Certificate to a supplier of stationery or office forms since these materials by no stretch of the imagination, become physically incorporated in the product to be delivered to the army or navy. A publisher of instruction books for the air corps could, however, extend an army-navy certificate for his paper requirements since the paper *would be* physically incorporated in the finished product.

Form PD-1

The second type of preference rating certificate evolved was the O.P.M. Preference Rating Certificate. Application for this type of rating was made on Form PD-1. This type of rating became available to industrial plants and others who needed materials, but whose operations either had no direct relationship to army or navy requirements or whose products were not eligible for army or navy certificates, because they were not included on the army-navy critical list.

Under this procedure it was necessary to file separate applications with respect to each supplier and if the items requested from the supplier were not of the same general class it was likewise necessary to file separate applications for ratings even on the same supplier. The certificate issued pursuant to the PD-1 application was not of an extendable character. Consequently, if a paper company obtained a rating on a piece of papermaking equipment, it was necessary for his supplier to file an additional PD-1 application in order to obtain any parts that he might require to complete the fabrication of the equipment that was the subject of the original order. This procedure, while effective, was in many cases exceedingly cumbersome.

P Orders

It soon became apparent in light of the increasing number of PD-1 applications filed that steps would have to be taken to simplify priorities procedures. The most obvious remedy was some type of a blanket rating to meet the situation. A limited type of blanket rating was developed, known as the "P" order. The "P" order, as it subsequently developed, assigned a limited blanket rating to a company or a group of companies, to facilitate the acquisition of specified scarce materials needed for defense or essential civilian production.

Relatively few of the 100 odd "P" orders that have been issued to date are of direct interest to the pulp, paper, and paperboard industry. Those that directly effect pulp and paper operations can be briefly outlined.

Projects

First came the project rating type of certificate. On application made to the project rating section, a "P-19" certificate, assigning a blanket rating for all materials required for a specific project designed for the production of goods vital to defense or essential civilian use, could be made available. This blanket rating could be extended by the applicant to all suppliers of materials essential to the project, and these

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 16-19, 1942.

[1] Chief, Priorities and Incoming Allocations Section, Pulp and Paper Branch, War Production Board, Washington, D. C.

suppliers could in turn extend the rating to subsuppliers. Obviously, this type of certificate simplified procedures materially and eliminated the necessity for countless PD-1 applications.

LABORATORIES

A second type of limited blanket rating is to be found in the laboratory supplies and equipment order —"P-43". This order assigns a blanket *A-2* rating to deliveries of materials to be used for scientific research conducted by a laboratory which will enter directly or indirectly at any stage into the production of such materials. All sorts of laboratory materials can be procured under this blanket rating; the rating is not extendable, however, for the procurement of laboratory buildings or other structures. In the case of laboratory buildings, the project rating procedure is the procedure that should be followed. Any research laboratories in the pulp, paper, and paperboard industry that have not taken steps to secure a blanket rating for the procurement of laboratory supplies should do so at once.

MAINTENANCE AND REPAIR

The procurement of maintenance and repair parts and operating supplies under the normal PD-1 procedure became increasingly arduous as the list of scarce materials began to grow. For this reason, consideration was given to a limited blanket rating to facilitate the procurement of materials of this type. Accordingly preference rating order P-22 was issued in September, 1941. This order was replaced in December, 1941, by preference rating order P-100. Under this P-100 order, a blanket *A-10* rating is assigned to all manufacturers, warehouses, and wholesalers to facilitate procurement of maintenance and repair parts, and operating supplies.

The order, as amended, is available not only to pulp, paper, and paperboard manufacturers, warehousers, and wholesalers, but to industrial foundries and machine shops, servicing the pulp and paper industry; it is likewise available to employees buying their own tools. The rating assigned is extendable. A supplier served with a rating may extend it to get materials to be delivered to a producer or to be physically incorporated in the materials ordered by the producer. The supplier in turn may extend it to a subsupplier.

The order should not be extended to obtain materials for expansion or replacement or materials that are capitalized or materials carried on the applicant's books as a fixed asset; further the rating can not be used to procure processing materials—i. e., materials that are physically incorporated in the end product produced. The term "operating supply" as defined in the order includes only those supplies that are consumed in the manufacturing process and do not become an integral part of the finished product delivered.

Interpretations made by the Maintenance and Repair Section, clearly indicate that pulp, paper, and paper products are *not* operating supplies and that the blanket *A-10* rating cannot be extended to obtain materials of this type.

No specific authorization from Washington is required in connection with the extension of this blanket *A-10* rating for maintenance and repair parts and operating supplies. It is simply necessary for the producer to endorse the following statement on his purchase order "Material for Maintenance, Repair, or Operating Supplies—Rating A-10 under Preference Rating Order P-100 with the terms of which I am familiar."

The order includes paragraphs designed to restrict inventories and withdrawals from inventories, and these provisions should be carefully noted as use of the blanket *A-10* rating implies compliance with these restrictive clauses. The order provides that the producer's inventory and withdrawals during a calendar quarter shall be restricted to not more than 110% to the corresponding figures for the same calendar quarter of 1940 or at the producer's option, withdrawals during a calendar quarter are permitted up to 27½% of the amount withdrawn during the caldar year 1940. The 10% bonus is included to compensate for price advances. Inventory adjustments on the basis of increased production will be considered, if application is made in proper form to the Maintenance and Repair Branch. In other words, if a mill's production is currently 50% in excess of 1940 production, the Maintenance and Repair Branch will consider an application for a proportional increase in permissible inventories and withdrawals.

The P-100 order assigned a blanket rating for maintenance and repair parts and operating supplies —it did *not* apply to processing supplies, those supplies that *are* physically incorporated in the product produced. Under the P-100 order, it was still necessary to use PD-1 applications to obtain materials of this character.

The Production Requirements Plan

The next natural step was the development of an order that would facilitate the procurement of processing supplies as well as maintenance and repair parts and operating supplies. The Defense Supplies Rating Plan had been developed to facilitate the procurement of supplies necessary for the production or fabrication of products of a direct defense character. Under this plan, however, it was necessary to present fully documented proof of the defense character of the business to which the defense supplies rating was to be applicable. The need for a broader plan which would aid in the procurement of processing materials for both defense and essential civilian products soon became apparent and the Production Requirement Plan (P.R.P.) was designed to fill this need. Under this plan, quarterly requirements of operating and processing supplies and maintenance and repair parts are accorded priority assistance. The order may not, however, be used to obtain capital equipment or materials for the improvement of, additions to, or expansions of property or equipment. Such assistance should be obtained through the usual PD-1 applications or through the project rating procedure.

The rating or ratings assigned under P.R.P. to each manufacturer will be determined on the basis of the importance of the products in relation to defense and essential civilian needs, and the end use of the products, the types and quantities of materials required, and by such other policies as may be established. Such ratings will be determined on the recommendations of the appropriate industrial and material branches of the War Production Board.

A manufacturer, to obtain assistance under this plan, must submit Form PD-25A, obtainable from the W.P.B., or any Priorities Field Office, to the Production Requirements Plan Branch, War Production

Board, Washington, D. C. On this form a manufacturer lists his shipments for a previous quarter and the materials for the acquisition of which he desires a rating. The rating or ratings assigned, and the material to which they may be applied, are indicated on the application form, one copy of which will be returned to the manufacturer together with a copy of Preference Rating Order P-90, which sets forth the terms on which the ratings are assigned. The manufacturer, in order to apply the preference ratings granted must endorse his purchase orders as prescribed in the order. A supplier, in order to apply the preference rating to deliveries of material to him, must obtain a copy of the order, sign, detach, and return the acceptance thereof to the War Production Board. The supplier may then apply the rating, by endorsement on his purchase order, as prescribed in the order, only to material which will ultimately be delivered by him or another supplier, to the manufacturer, or to deliveries which will be physically incorporated into material which will be so delivered. A supplier may apply the rating to replace in his inventory material delivered under the rating, on the conditions set forth in the order, and these conditions are different for manufacturers and for distributors.

No preference ratings other than those authorized in Form PD-25A may be used by the manufacturer operating under the plan to obtain deliveries of production materials or maintenance, repair, and operating supplies unless specific authorization is granted by the Director of Priorities through the Production Requirements Plan Branch. Extension of preference rating certificates received by the applicant, such as PD-3, and preference rating orders of all types, including P-100 is prohibited.

This plan will replace the Defense Supplies Rating Plan with its Preference Rating Order P-6 and Form PD-25. Persons now operating under that plan can be advised as to the conditions of changeover to the new plan by writing the Production Requirements Plan Branch.

Forms PD-1A and PD-3A

On March 2, 1942, the PD-1 form and the PD-3 form will become extinct. They will be replaced by Forms PD-1A and PD-3A. The principal difference between these new forms and their predecessors is that these new forms will be extendable in character —in other words, a supplier on whom the PD-1A and PD-3A preference ratings are served can extend the rating assigned to obtain parts or materials to be physically incorporated in the product upon which the original rating was assigned. In the case of those producers not operating under the PD-25A Form, the PD-1A form may be used to obtain all kinds of processing materials. In addition, it may be used to obtain repair and maintenance equipment and operating supplies, for which the blanket *A-10* rating assigned by the maintenance and repair order is not adequate to secure delivery. It is likewise available as a means for procuring ratings on capital equipment and on materials carried on a producer's books as fixed assets. In effect, the PD-1A and PD-3A certificates will in all probability continue to be important aids in the procurement of all types of pulp, paper, and paperboard mill supplies. The extendable feature will materially increase the value of this type of rating from the standpoint of purchasers of pulp and papermaking equipment and materials.

Scarce Materials

The foregoing outline relates to the methods and priorities mechanisms available for the procurement of scarce materials. We will now consider what those scarce materials are, and the extent to which they are likely to be available, for use in the operation of pulp and paper mill plants.

First of all, it will perhaps be well to consider those materials with respect to which the pulp, paper and paperboard industry has had special consideration.

When the copper conservation order was originally issued, it listed a number of commodities from which the use of copper was barred and with respect to the balance, copper consumption was curtailed to 70% of consumption during the last three months of 1940. At the request of the Pulp and Paper Branch, an amendment was written into the copper order exempting from the provisions of the order the use of copper "for repair or replacements parts in plants employing chemical processes . . . . . where the existing installation is copper or copper-base alloys and to the extent that chemical action makes the use of any other material impractical." The effect of this exemption was to exclude from the restrictive provisions of the order Fourdrinier wire, screen plates, and other essential paper mill items; the exemption does not affect items not subject to chemical action. Were it not for this exemption, the copper order would have the effect of curtailing the available supply of wire with a consequent proportional reduction in the productive capacity of the industry.

Similarly, a wool order, effective January 3, 1942, curtailed wool processing to 80% of quantities processed during a base period. The effect of this order would have been to curtail substantially the use of wool for plup and paper mill felts, with a consequent curtailment of the available supply of felts. A ruling has been obtained, however, to the effect that the restrictive provisions of the order shall not apply to the manufacturers of paper mill felts. As a consequence, this important phase of paper mill operation has been protected.

Similarly, an order has been issued which has drastically curtailed the consumption of rubber. Under the current order, restricting the use and sale of rubber, however, industrial uses of rubber in pulp and paper plants have been well protected. In practically all instances, current uses of rubber in a paper mill plant are permitted up to 140% of the average monthly consumption of rubber during the 12-month period, commencing April 1, 1940, and ending March 31, 1941. This restriction is generous and should not unduly hamper pulp and paper operations.

With respect to tires for trucks used in wood's operations, conferences between industry representatives and the Rubber Section have been held, with a view to securing assurance that tires essential for the maintenance of trucks used in the hauling of pulpwood will be made available. Assurances to this effect have been given even though in some instances, it means that the allotment to the pulpwood operations in a given state may be in excess of the allotment originally planned for the entire state.

An order is presently under consideration which will restrict and prohibit the sale of cotton duck except for military usage. Assurances have been given that the requirements of the pulp, paper and paperboard industry for duck for drier felts will be recognized and it is expected that a suitable exemption

will be included in the cotton duck order which will enable producers to obtain their necessary requirements.

Under the Tin Order, M43, the use of tin in specified items is prohibited and with respect to all other items, tin consumption is curtailed to 50% of the specified base period. This respective provision if applied to the producer of phosphor bronze wire available for the production of Fourdrinier wire will be cut in half. Efforts are being made in cooperation with the Tin Section and the Wire Cloth Manufacturers Association to work out a satisfactory solution to this problem.

The foregoing exceptions and rulings have been sought and obtained on the theory that a denial of these materials for the purposes indicated would directly effect the industry's productive capacity. They were granted on the premise that satisfactory substitute materials are not available. If the materials involved become increasingly critical, however,there is no guarantee that the *status quo* can be maintained or that productive capacity may not be sacrificed later for the sake of a relatively small quantity of vital metals needed for the war effort. It is the duty of the industry, however, to see that these scarce materials are used sparingly and that every available practice, designed to conserve these materials, is employed and that every possible step is taken to eliminate wasteful practices and to effect a maximum conservation.

Status of Critical Materials

A brief review of the current situation with respect to certain of our basic metals will suffice to indicate the seriousness of the problems with which we are faced.

Steel

The present capacity is 86,000,000 tons. The capacity will be increased to 99,000,000 tons on completion of present expansion program in 1943. 1942 production may be below 1941 production, however, because of scrap situation, but sharp increase is expected in 1943. 16,000,000 tons increase in pig iron capacity is under way to relieve current scrap shortages caused by unprecedented operations during the past year. Increases in steel capacity will be largely for plate and special forgings, where present situation is most acute.

Steel Alloying Metals

The most important alloys are nickel, chromium, tungsten, manganese, vanadium, cobalt, molybdenum, and silicon. Only molybdenum and silicon are found in plentiful quantities in this country; we depend largely on imports for all the rest. This country produced in 1940 approximately 5,000,000 tons of alloy steel, in 1941 over 8,000,000 tons, and 1942 production may exceed 12,000,000 tons. The pulp and paper industry will have to give careful study to specifications in considering future steel alloy requirements.

Chromium

87% of our supply normally comes from Africa, the Philippines, and Turkey. Substantial curtailment of these imports creates an extremely serious situation. 50% of chrome supply is used for stainless steel (required for armor plate), 30% for refractories to line steel furnaces, 20% for chemicals. Chrome can be melted only on A-1-J rating or better. Indications are that there will be little or none for the Pulp, Paper, and Paperboard Industry.

Copper

Estimated supply for 1942, 1,800,000 tons; estimated demand, 2,570,000 tons; apparent shortage, 770,000 tons. Sources: North, Central, and South America. Conservation urgently required. Copper will be available only if a reasonably satisfactory substitution cannot be made.

Tin

Domestic consumption has been at rate of 100,000 tons annually. Domestic production in 1940 was only 44 tons; imports, 124,810, of which 96,454 tons came from British Malay States where Singapore is located and 12,101 tons from Netherlands Indies. Government and private agencies have stock piles estimated as about equal to a year's supply. Use of tin banned for many purposes, cut to 50% for all unlisted uses. Principal uses: Tin plate 40%, Solder 21.8%, Babbitt metal 7.2%, Bronze 6.8%, Collapsible tubes 5.9%, Tinning 3.1%, Type metal 1.9%, all other 12.9%. Substitutions will have to be made wherever possible.

Zinc

1941 supply, 920,000 tons; demand, 1,230,000 tons; apparent shortage, 310,000 tons. Estimated requirements for 1942, 1,465,000 tons; indicated shortage, 500,000 tons. Supply is from North and South America and should be secure barring transportation difficulties. About 44% of supply used for galvanizing and 28% for production of brass. Shortages will necessitate substitution wherever feasible.

Lead

Supply estimated at 1,086,000 tons for 1942; demand at 1,080,000 tons. With exception of 48,000 tons imported from Australia, supply is from North, Central, and South America. Use of lead for production of certain items has been prohibited; use for unlisted items curtailed to 90% of 1941 base period, with indicated exceptions. (M38C.) Supply should be adequate for war and essential civilian uses.

Aluminum

Estimated 1941 supply, 600,000,000 pounds; estimated 1941 demand, 1,400,000,000 pounds; apparent shortage, 800,000,000 pounds. About 60% of bauxite for aluminum comes from British and Dutch Guiana, balance from Arkansas. Raw material supply should be relatively secure. Estimated 1942 production, 800,000,000 pounds. War needs will absorb all new production. Other metals will have to be substituted wherever feasible.

In addition to metals, other basic materials on which the pulp and paper industry relies are extremely critical.

Rubber

98% of our crude rubber supply came from the Orient. Under allocation.

Titanium

Producers were largely dependent on ilmenite imported from India. Under allocation.

Dyes

While there are no direct controls on dyes or printing inks as such, there are controls on many of the chemicals essential for their manufacture; i.e., phenol, formaldehyde, toluene, tungsten, chromium, cobalt, etc.

Most of the aniline is being used as a stabilizer for gunpowder; it is also used as an accelerator for rubber. About 80% of the total production is being diverted to war purposes. Shortatges of aniline dyes are indicated.

Chlorine

The industry is familiar with the directives that have already been issued curtailing the use of chlorine. Further curtailment orders diverting additional chlorine from the industry to war are indicated.

Formaldehyde and Phenol

War uses of these chemicals have severely restricted the supply available for use in the industry.

Wool

Wool processing has been curtailed to 80% of specified base period. Felt manufacturers exempted.

Cotton Linters

Under full priority control because of heavy government requirements.

Restrictions on the use of certain of these critical materials will tend to increase demands for pulp and paper. It is indicated, for instance, that burlap restrictions will result in demands for about 200,000 tons of kraft paper for paper shipping sacks. Similarly, tin restrictions will increase the demand for paperboard containers. In the interest of the war effort the industry will have to be prepared to meet new demands of this character.

Priorities Policy

In the consideration of materials requirements, fixed policies and principles seem to be evolving in the War Production Board. In order that every pound of scarce material and every hour of machine time that can be spared for the War Production Program may be available, the general attitude toward applications for priority assistance on materials requirements has become increasingly severe. Probably one third of the applications that are presently being filed by the pulp, paper, and paperboard industry are being denied. Expansions within the industry are not being sanctioned and materials required for this purpose will be denied the applicant. Improvements designed to increase productive capacity, no matter how reasonable, will likewise in all probability be denied. Whereas, two months ago the value of the pulp or paper production that would result from an improvement was weighed against the value of the scarce materials required to effect that

improvement, today the scales are heavily weighed in favor of the conservation of the construction materials required; no matter how badly the new pulp or paper production may be needed, there is every indication that the critical metals will be needed far more. Applications for essential maintenance and repair parts will normally be approved although very frequently the use of substitute materials may be required. Replacement of worn-out equipment will normally be approved, although the burden of proving the necessity for the replacement will rest upon the applicant and in cases where there is any question of necessity proper investigation will be made by a War Production Board engineer who is familiar with pulp and paper mill operation. In all cases of replacements involving substantial expenditures, such an investigation will be made.

Engineers Must Solve Problems

In the critical period that lies ahead, the technical man, in my opinion, will occupy the dominant position in pulp and paper mill operations. During the depression years of the 1930 decade, it was the salesman who occupied the dominant role, and upon whom continued plant operation chiefly depended. During the prewar period it was the purchasing agent who played the leading role. The purchasing agent's role is becoming increasingly difficult however, and in my opinion the time has come for him to pass the ball to the technical man.

Tactics and strategems will have to be mapped, and in the planning it will be your obligation to:

a. Find substitutes for scarce materials.
b. Develop and produce new products to replace products dependent on scarce materials.
c. Repair and maintain plant without the usual repair and maintenance materials.
d. Engineer operations to overcome shortages of power, fuel, labor, etc.

Engineers' New Battle

Insofar as civilian industries are concerned, your battle will, for the most part, be a defensive one,—the complete reverse of your usual role. You have been accustomed to advances, not retreats. Your talents have been devoted to the development of new and better machinery, new and better products, new and better methods; and in that development you have progressed with the aid of the accumulated knowledge, experience, and facilities of science and industry. Each new facility, each new material, each new principle developed, under normal circumstances, pointed the way to further progress. Your problem is now chiefly one of an orderly retreat. One after another the usual facilities, the usual materials, the usual methods are being denied you. From a military standpoint an orderly retreat is the most difficult of all tactical movement. It will be no less difficult on your front. To accomplish it with a minimum loss of production, a minimum loss of employment, and a minimum loss of invested capital *is your responsibility.*

Form Electronic Control Section

As a result of the rapidly expanding field of industrial electronic control, an electronic control section has been organized in General Electric's industrial control division. Allen E. Bailey, Jr., and William D. Cockrell have been appointed as manager sales and engineer respectively of the new section. Mr. Bailey will report to G. R. Prout, manager of the industrial control division, and Mr. Cockrell to E. H. Alexander, engineer of that division.

A native of Burnt Hills, N. Y., Mr. Bailey joined the General Electric Company in 1916 and was first assigned to its drafting department at Schenectady. From 1918 to 1927 his engineering talent was applied to the design and supervision of ordnance control apparatus for the United States Navy. In 1929 after a short period as sales engineer in G-E's switchgear department, he transferred to the company's industrial department at Schenectady.

Since that time Mr. Bailey has been affiliated with the development of industrial applications of vacuum tubes. Most notable of his contributions to the electronic industry was the light control system of the Chicago Civic Opera House in 1929, the first such project to utilize the thyratron tube. Mr. Bailey holds patents on that installation and on other devices.

Mr. Cockrell was born in Tallahassee, Fla., and was graduated from the University of Florida in 1928 with the degree of B.S. in electrical engineering. He immediately joined the General Electric Company as a student engineer, being transferred in 1930 to the Radio Engineering Department and later to the industrial control engineering department.

Mr. Cockrell holds 27 patents on electronic control. He recently received a Charles A. Coffin Foundation award from General Electric for outstanding contributions in 1941 to the development of photoelectric-type electronic control for large machines and presses. Mr. Cockrell is a member of the A.I.E.E. and of the New York State Society of Professional Engineers.

Heads B. C. Forestry Branch

Wm. H. McLallen, vice-president of the Capilano Shingle Co., Ltd., was elected president of the British Columbia Branch of the Canadian Forestry Association at their annual meeting, at Vancouver, B. C., recently. Mr. McLallen succeeds C. Dewey Anderson, managing director of the Salmon River Logging Co., Ltd.

Geo. P. Melrose, assistant chief forester, who attended the meeting, representing British Columbia Forest Service, spoke highly of the work being carried on by the association, and especially its Junior Forest Wardens.

E. Charles Wilkinson, manager of the association, stated that the association has already formulated strenuous campaigns against forest fires for this season, and much of this work is now underway.

In the next few weeks an additional 1000 Junior Forest Wardens will be appointed in all schools of British Columbia, bringing the total number to 12,000. Mr. Wilkinson added that a good number of the "graduate" Junior Forest Wardens now occupy posts of responsibility as officers of land, air and naval forces.

The meeting named Hon. A. Wells Gray, Minister of Lands, and C. D. Orchard, provincial chief forester, as directors ex-officio.

Directors for the B. C. branch in 1942 are: C. A. Bartram, Dr. A. H. Bayne, E. G. Baynes, S. G. Blaylock, C. P. Browning, H. B. Dollar, H. S. Foley, T. A. Kelvey, J. McInnis, A. McKelvie, Geo. P. McLauchlin, A. E. McMaster, H. J. Mackin, W. T. Moodie, G. W. O'Brien, W. F. Stewart, C. P. W. Schwengers, Lt.-Col. F. B. J. Stephenson, H. P. Wilson, J. A. Young, L. Killam, R. McRae, J. L. Turnbull.

Testing Printability of Paper with Ink*

By F. A. Weymouth [1]

Abstract

This article describes the use of an engravers proofpress as an instrument to determine printability. While the use of the proofpress for this purpose is not a new venture, it has been found that the work of previous investigators could be augmented. The important mechanics of preparing the elements involved in the test are fully described. These involve the press, rollers, plates, ink application, the preparation of samples, and amount of impression. With these factors under complete control by the press method, two samples are compared for printability. This comparison enables the operator to observe the following qualities of two paper samples:

(1) ease of impression or coverage, (2) blottability, (3) evenness and rapidity of ink absorption, (4) degree of offset, (5) relative show-through and strike-through, and (6) the pick test.

It is pointed out that since visual interpretation of the printed result is the final judge of printing qualities, the choice of the engravers proofpress as a paper testing instrument is desirable, especially since it is extremely difficult to correlate other instrumentation studies.

The interest of the ink manufacturer in paper is chiefly centered in the desire that the paper will perform its function under the average commercial conditions required. By "average commercial conditions" is meant that the paper is suited to the particular printing press and ink commonly used on such a press. The ink manufacturer is cognizant that paper must have certain qualities about which he is not specifically concerned. For example, he is not interested in the folding quality of a sheet of paper. One the other hand, he is almost entirely concerned with the printability of paper—whether or not his inks when transferred to a paper surface will reproduce with exactitude the printing plate.

The subject of printability of paper is vital to the papermaker, inkmaker, and the printer, since the largest proportion of paper manufactured is printed. Of the three elements involved, ink is the most flexible while nothing can be done to change the paper after it is made. In a certain respect, this is unfortunate because frequently paper is remade because ink and press work could not remedy a deficiency or an unusual paper condition.

The present investigation began a number of years ago as the outgrowth of critical studies of the printing quality of inks. At that time it was observed that paper exerted a profound effect on the results of various ink formulations. Since that time, laboratory experimentation throughout our corporation has included a wide variety of papers, identified as to source and described by other pertinent data.

"A large proportion of the paper manufactured is printed, but there is not a great deal of literature on the technical problems connected with the printing quality of paper." This statement was made by Prior *(4)* in 1934. That statement is still a fact. Actually there are less than twenty articles in the literature which even touch upon printability and almost half of these are devoted to newsprint (*1 to 17*). We are indebted to the efforts and reports of this small group of men for the contribution of their results towards solving the problems of printabitlity. At this point, we would like to ask the question "Why, of all the hundreds of articles available on paper manufacture, is there such a lack of information on printability?" Some of the answer to this question may be found in the lack of an adequate instrument or a combination of them as reported by previous observers. Among this small group (Bekk, Prior, Larocoque, Niemczyk) that have reported their studies of printability, all use or correlate their results by actually printing the paper with ink.

In 1939 the company with which I am associated made a study (*17*) of 86 coated papers which were all representative grades manufactured in this country. Great difficulty was encountered in correlating the printing qualities of papers. The correlations were attempted by such instrumentation studies as oil penetration, smoothness, softness, compressibility, picking, formation, pH, etc. Further than this, the study led eventually to the proofpress as the final check on printability, a conclusion which had been reached previously by other individuals. For the most part this technique had been developed by Case who for many years has set the standards of the varied papers used in Sears, Roebuck & Co. catalogs. Heretofore, his technique has not been published although paper mills have now adopted his methods.

Before presenting the printing method of printability testing, some of the criticisms voiced in paper mills to present testing methods are enumerated. The oil drop test often employs oils not representative of printing inks. During the last few years the effect of pigment and particularly the dispersion of the pigment and its particle size has been found to have a profound effect upon printability which cannot be demonstrated by oil films alone. One criticism of the smoothness tests has been that the smoothness of the sheet under printing pressure is not measured. Possibly it is not surprising that we have not been able to measure printability with one, two, or three instruments when there are many more known factors which will effect printability. These may include resistance to oil wetting, uneven absorption, degree of sizing, nature of pulp, degree of hydration, formation, softness, surface smoothness, etc.

Use of the Proofpress

Returning to the subject of printability tests, we are convinced that the engravers proofpress under the proper handling becomes an instrument of paper testing whose accuracy has been checked many times directly with commercial presses. This procedure yields a result which can be visually interpreted and easily understood by all concerned including the print-

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 16-19, 1942.

[1] International Printing Ink, Chicago, Ill.

er and his customer. Simplicity is the keynote of a method which shows simply a printed result of an ink on Paper Samples A and B. All that the printer or his customer will later see can be predicted from such a properly devised test. When the ultimate purchaser of printing examines his finished printed product, his mind is concerned solely with printed appearances of Papers A and B. He is not concerned with the fact that one mill, because of a certain economic setup employs certain materials or methods of manufacture.

The mechanics involved in some of the previous paper testing methods have either been too complicated or have introduced other factors as the element of time or press speed. The actual time involved in making the printability test is small but the mechanics employed in getting the proper testing conditions is highly important and will be described under the separate topics to follow:

The Press

An engraver's proofpress such as a No. 4 Vandercook or Hacker test press is used for press testing.

The Rollers

Ideal OX-base rollers covered with a thin glue glycerine coating to 2½ inches diameter are preferred if the Vandercook No. 4 is used. All rollers should be checked after coating to be sure that the rollers are of proper circumference throughout their entire length. Solid glue rollers are not recommended because they rapidly go out of round. Synthetic rubber or rubber rollers are not recommended because if heat-drying inks are to be tested they involve the factor of solvent absorption into the rollers. The setting of the rollers on the Vandercook is a simple operation and consists of raising or lowering inked rollers by set screws until a mark is made of proper width on the roller gauge provided by the press manufacturer.

The Plate

The printing plates must be chosen very carefully so that the human element will be eliminated during the course of testing. Plates mounted on wood blocks are not recommended. Patent base is satisfactory provided the plates mounted on the base are of uniform caliper throughout. We use plates of 0.154-inch thickness and have our engraver submit plates with proofs which are printed with a small amount of ink and light impression. This shows up the low spots (if there should be any) after these precautions. A solid plate 3 inches by 8 inches is ample for making any of these tests to be later described.

In the halftone printing testing to be described, halftone plates are similarly prepared (0.154 inch thick). The screen work has been dropped slightly below any solid areas by the engraver. The purpose of the preparation is to eliminate all makeready and "spotting up" of low areas in the plates by inexperienced operators.

Case uses a solid steel plate (0.918 inch thick) which has been chromium coated so that its surface is optically smooth. The importance of correct plate height cannot be over emphasized, indeed it is an absolute essential for accurate testing.

With a patent base 0.759 inch in height, the 0.154-inch plate is underlayed with 0.005 inch of packing. This builds up the plate height to the 0.918 inch required. A micrometer is always used to check plate heights and packing.

Applying the Ink to the Rollers

One of the variables in applying ink to rollers in the past experiments has been that the specific gravity of ink has not been carefully regarded. All printing is performed by volume (film thickness) and in the making of laboratory prints it is necessary to see that any given volume of ink has been evenly applied to the rollers in spite of the large amount of vibration on the Vandercook No. 4 press. If the ink is evenly applied, the same film thickness of ink is transferred to both sides of the plate. One of the common methods is to weigh off a quantity of ink for each test. However, when shifts are made to other inks, there is introduced the factor of specific gravity. One of our laboratories has developed a simple instrument which allows a given amount of ink to be applied for each notch of the ratchet. This instrument is accurate from one test to another within a variation of 3%. This has been ascertained by actually checking the ink weights on a balance. The application of ink to the rollers with this instrument is much easier than with an ink spatula and the ink can be applied more rapidly and evenly.

Preparation of the Paper Samples

After all of the foregoing tools are in order, the actual testing is a simple operation. Strips of the paper to be tested and the standard sample are cut approximately 2½ inches by 10 inches. The sample to be tested is underlayed with that of the standard and vice versa and the pairs are then placed side by side and attached to a third piece of paper with scotch tape at one end, taking care that both wire and felt sides are kept in comparable positions. One to four samples are prepared depending upon what information is desired as described under Procedure.

Printability Tests Using a Solid Plate

Thus far we have described printability testing under the following controlled conditions:

(a) A precision press such as the Vandercook no. 4.
(b) Glue glycerine coated rollers for accuracy.
(c) The use of patent base in preference to wood blocks.
(d) Carefully chosen plates made with the greatest accuracy or solid steel chromium coated plates.
(e) The application of the ink in controlled amounts.
(f) Preparation of the paper samples.

The impression cylinder of the Vandercook is undercut 0.040 inch. The amount of packing used is that necessary to compensate between the thickness of the standard plus the unknown sample in question and the sheet upon which they have been attached. Some impression is needed for printing as we now have a plate which is 0.918 inch in height and our impression cylinder with its packing and paper to be tested is still 0.040 inch. Over the packing is a hard manila oil dipped sheet approximately 0.005 inch in thickness. Another sheet 0.002 inch in thickness is then added for the printing impression. If any more packing is needed, one half is placed on the cylinder and the other half is placed under the pressplate. If a patent base is used, the base is merely lifted and the packing placed underneath the base. The press is now ready for operation. Eight cubic centimeters of ink is applied on the solid vibrator of the Vandercook. The ink used in all testing is chosen as representative of inks used in such printing. The ink is allowed to distribute for about five minutes. The

plate is placed in the middle of the press rather than to either side and in a position at least 2 inches from the dead line. The solid plate is inked by double rolling and one print is pulled on a good grade of enamel paper and this first print is then discarded. The reason for this operation is that it takes away the factor of a double rolled plate. The test sample and standard which has been previously prepared is then placed in the press and printed.

PROCEDURE

At this point of the examination of the press result, Case divides the work into 6 divisions as follows:

(1) Ease of impression or coverage: By regulating the printing pressure and the quantity of ink, the ease of impression or ease of covering of the paper by the ink can be readily compared in an examination of the two samples. Low spots in the paper surface do not print with light amounts of ink and printing pressure. Heavier films of ink allow the observation of mottle.

(2) Blottability: After a printing impression has been made on the test samples using a moderate film of ink, the press rollers are raised at the end of the printing stroke. This prevents the reinking of the printing plate which forms an important part of this study. A permanent record is then made by pulling an impression with the rollers raised on another piece of paper which records the quantity of ink left on the plate by the paper. This test shows the ability of both samples to clean the ink from the plate.

(3) Evenness and rapidity of ink absorption: Observation of the evenness and rapidity of ink absorption into the sheet allows the hard spots of the paper and evenness of ink absorption to be directly compared.

(4) Degree of Offset: By applying a moderate quantity of ink and quickly laying a sheet of paper over the freshly printed specimen and then again feeding these through the press, the tendency to offset of one sample versus another is readily determined.

(5) Relative show-through and strike-through: Should thin papers be involved and a large quantity of ink used on the sheet, the qualities of show-through and strike-through can be directly compared.

(6) The Pick Test: By the use of the solid vibrator, the test sample and standard paper prepared as in the paragraph on "Preparation of the paper samples" previously outlined, an ink picking test can be readily performed. This test is used to correlate all work with wax pick tests. One can readily predict the press performance of one sheet versus the other as far as a tendency toward picking is concerned. Should a yellow ink be used and a difficulty be encountered in seeing the small amount of fiber or coating lift present, a small amount of blue ink is mixed with the yellow to make it slightly greener, giving it a more contrasting color to that of the paper.

In correlating hand proofs with the commercial press, we often obtain some pick on the hand press and not on the commercial machine. The reason for this is that the ink is broken down by the press rollers of the commercial press and the printing machine becomes warm so that the viscosity of the ink is lowered. The test, however, on the paper samples is still relative.

An Analysis of the Method

The results obtained from this method of testing have eliminated many factors often present in printability testing. They have also added certain desirable features. By this method the same printing pressure is used and the prints are pulled at exactly the same press speeds. The plate is mechanically inked which eliminates the human factor. The factor of resiliency of printing pressure has been equalized by backing up one sheet with the other which at the same time compensates for any slight differences in caliper. By previously carefully preparing our rollers, plates, and suitable adjustments of press packing, we have controlled many of the factors not present in commercial trials or other instrumentation studies.

Printability Tests of Halftone Plates

The methods developed by Case with variations devised by our own laboratories are used to meet specific needs. Several years ago it was found necessary from time to time to show up small differences in screen printing and that we have a visual demonstration for our work with paper mills and printers. In this test we use halftone plates which have been previously described. The screen work chosen is dependent entirely upon the type of printing. For publication work on uncoated paper we use a 120-line screen or smaller depending on the paper quality. For coated papers which are used for black and white illustrations on folders, etc., we use a plate with a 133-line screen. The same printing technique is used as has been previously described, backing up one paper with the other so that we get two halftones printed with the same impression and at the same press speed.

Another variation of this is that with the double printing plates and split divider, one paper can be printed with two different inks at the same time and with the same accuracy. The accuracy of this test is entirely dependent upon getting exact duplicate plates. Two casually made electros will never be found to match in the screen tones. Our laboratories prefer this method to that of printing one sheet of Paper Sample A alternating with Sample B since we have found that sometimes a deposit of ink is left on the plate which adversely affects the other paper.

Choosing the Operator for the Test

Any junior chemist or laboratory assistant after a period of practice can become quite proficient in making these tests provided due care has been exercised in preparing the samples, printing plates, and rollers. After the press has been set up it need not be changed. The press rollers should be checked once a day which is a matter of a few seconds with the gauge provided. The actual press time needed to make printability tests or pick tests including washing up the press after the test is ten minutes or less.

The entire cost of such a press, plates, patent base, and a double set of glue glycerine rollers is nominal.

A Paper Mill Chemist Studies Inks

With such a method of testing as we have outlined, a paper mill chemist is now given a tool which will enable him to study ink in addition to paper. Let us assume that he is making a sheet which is used for 4-color wet printing. Such a paper should have good resistance to pick of ink because this will enable the inkmaker to use a yellow with a high viscosity, and thus get the best lower steps in viscosity between the other three colors and resultant maximum wet trapping of inks. The paper chemist could obtain quite

readily from a half dozen ink manufacturers, who are known to be leaders in this field, samples of their first down yellows. By the use of the finger test, the most viscous ink of the group could be chosen arbitrarily as the standard. The balance of the ink samples would therefore run on the other half of the press with the split vibrator at the same time on the same sheet of paper. This would give a comparison for the amount of pick and would readily tell the paper maker if the paper he was producing was readily picked by the average commercial inks sold for such printing. In a like manner, from this study a representative ink could be chosen and the same used to test the paper of the particular mill involved against that of any competitor. In order to make a complete story on such a procedure, a number of competitive papers could be run and thus the paper mill would have a very detailed picture as to the average viscosity of ink with its low and high limits and a better visualization of what his competitors are supplying for the same type of printing. A complete picture would be the recording of the tack of the inks by one of the new methods now available

Let us suppose that the same paper chemist desired to study paper for printability of halftone blacks. Representative samples of ink could be obtained from any ink manufacturer and the same study repeated with these various inks and also competitive samples of papers. During the testing procedure the paper chemist would notice a great number of things about inks. He could observe that some are flatter than others which in turn has a certain effect on printing. He would notice the variance in mottle of certain inks and would be given the opportunity to check the scratch resistance of the same inks on his own and other representative papers. All in all, the whole procedure would tend to give the paper mill chemist a visual picture of the printing surface he is producing. As the matter stands now, much of the visual concern about paper is the concern of the ink makers, the printer, and the customer.

A typical example of the possible benefit of this method of testing is also given in the following example: Two paper mills are making paper for the same publication. The forms are arranged in such a manner that the paper from one mill is used on half of a press run and the other half of the run is made with the competing paper. Paper A is a soft paper with a low picking point and is an easily printed paper. Paper B would be described as a hard paper with a high pick test. Paper A requires about 30 hours makeready time on a 4-color press. Paper B requires at least 40 hours makeready time. Both papers are sold at the same price and the printer is able to get equal press production so that he has identical final costs with both papers. However, during the printing of Paper A there are more shutdowns because of picking trouble. Paper B however requires more changing of tympan sheets in order to keep a good impression. Both paper mills are satisfied that their paper is doing a job, which is neither an overstatement nor an understatement. If both mills were to use the printability testing method, it is reasonable to expect the mill making Paper A would bring up the resistance to picking and the producer of Paper B would make it more printable. These changes would result in increased production for the printer.

Conclusions

A detailed analysis has been presented of the press method to check the printability of paper because of the lack of adequate instrumentation at present to correlate or to visualize printability. It is not our wish or suggestion that the present paper testing instruments are not of value in the checking of printability but rather that after instrumentation studies have been made they be further augmented by the use of another instrument, namely, the engravers proof press. The fundamental problem of making paper tests still rests with the papermaker. In this age of speed and production the printer has not the time and in the future will take less time in order to conduct trials in the pressroom. A papermaker is very fortunate if he obtains a trial in a pressroom which is fully controlled. He will constantly be up against a problem in changes of ink, humidity, and in having available a type of printing form which is really adequate to make a proper test. He needs a test for duplication of results under identical conditions on the same form which is almost impossible commercially when any time has elapsed between trials.

It is only repetition of the advice of others in the paper industry that real advancement in solving the problem of printability will come when your knowledge of presswork and printing ink is fully developed. Was the thought ever explored of trading a paper chemist for a few months for an ink chemist?

It is our hope that by the adoption of this method of testing, the paper mills will definitely know the printability of any new paper developed, or use it for the control of the present papers they are now supplying versus their previous standard.

Our Chicago Products Development Laboratory is at the service of any paper mill interested in checking or adopting this method of checking printability by the use of the proofpress.

Acknowledgment

The author wishes to express his appreciation for the advice of Mr. H. N. Case of Sears, Roebuck and Co., the originator of many of the basic methods upon which the writer relied, and to others whose contributions to the literature have been used as a guide.

Literature Cited

1. Reed, E. O. Resistance of the Printing Paper. *Paper Trade J.* 86, no., 14 (March 22, 1928).
2. Bekk, J. Illustration Printing and Paper Quality. *Zellstoff Papier* 12, no., (Oct., 1932) 12, no., 11 (Nov., 1932) and 13, no., 1 (Jan., 1933).
3. Dodge, W. G., and Tarvin, G. E. The Testing of Newsprint for Smoothness, Ink Penetration and Transparency—*Paper Trade J.* 100, no., 5:38-40 (Jan. 31, 1935).
4. Prior, P. H. Experiments in Printing. *Paper Trade J.* (Oct. 10, 1935).
5. Dodge, W. G. and Tarvin, G. E. The Testing of Newsprint for Smoothness in Penetration and Opacity—*Paper Trade J.* 100, no., 5:38-40 (Jan. 31, 1935).
6. Wehmhoff, B. L. Evaluation of the Printing Quality of Paper. *Paper Trade J.* 100, no., 6:41-44 (Feb. 7, 1935).
7. Grantham, H. H. and Ure, W. The Testing of Newsprint with Respect to Printing Quality. *Paper Trade Journal* 101, no., 12:29-33 (Sept. 19, 1935).
8. Niemczyk, J. Physical Characteristics and Printing Quality of Paper. *Paper Trade J.* 102, no., 18, 31:33 (April 30, 1936).
9. Bekk, J. What The Printing Process Demands of Paper. An address before the Technical Section of the Paper Maker's Association in London School of Printing and Kindred Trades (March 13, 1935).
10. Larocque, G. L. The Oil-Paper Relationship in the Printability of Paper. *Pulp Paper Mag. Canada* 38, no., 2:77-84 (Feb., 1937).
11. Kantrowitz, M. S. and Simmons, R. H. Evaluating the Printing Quality of Paper. *Paper Trade J.* 104, no., 1 (July 1, 1937).
12. Prior, P. H. The Approach to the Problem of the Printing Quality of Paper. Paper Maker, International Number (1938).
13. Larocque, G. L. Laboratory Methods for Measuring the Printing Quality of Paper. *Pulp Paper Mag. Canada* 39, no., 2:99 (Feb., 1938).
14. Larocque, G. L. Laboratory Methods for Measuring the Printing Quality of Paper. *Pulp Paper Mag. Canada* 39, no., 2:99-105 Convention Number (Feb. 1, 1938).
15. News Ink. *Government Printing Office Technical Bulletin* 18.
16. Simmons, R. H. Paper Quality in Relation to Printing. TAPPI Annual Meeting (Feb. 20, 1939).
17. Weymouth, F. A. Some Observations on the Relation of Coated Papers to Ink. *Paper Ind.* (July, 1940).

Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

Importers may have their shipments listed in these columns by submitting records of imports to this publication.

NEW YORK IMPORTS

WEEK ENDING APRIL 4, 1942

SUMMARY

Newsprint ..... 4,785 rolls.

NEWSPRINT

——, ——, ——, 4,785 rolls.

RAGS, BAGGING, ETC.

Castle & Overton, Inc., ——, ——, 74 bls. rags.
S. Godfrey, ——, ——, 172 bls. rags.

CASEIN

National City Bank, ——, ——, 850 bags (ground lactic).
T. M. Duche & Sons, ——, ——, 850 bags (ground lactic).
Manufacturers Trust Co., ——, ——, 500 bags (unground rennet).
National City Bank, ——, ——, 850 bags (ground lactic).
A. Hurst & Co., ——, ——, 834 bags (ground lactic).
T. M. Duche & Sons, ——, ——, 850 bags (ground lactic).
Manufacturers Trust Co., ——, ——, 667 bags (ground).
Transatlantic Export Corp., ——, ——, 17 bags (ground lactic).
Button Corp. of America, ——, ——, 305 bags casein.
Siber Hegner Co., ——, ——, 34 bags (ground lactic).

GLUESTOCK

Darmstadt Scott & Courtney, ——, ——, 300 bls.
Manufacturers Trust Co., ——, ——, 123 bls.

PHILADELPHIA IMPORTS

WEEK ENDING APRIL 4, 1942

Paper Makers Importing Co., ——, ——, 209 tons china clay in bulk.
J. W. Higman Co., ——, ——, 217 tons china clay in bulk.
——, ——, ——, 1,074 tons china clay in bulk.

DEXTER RECEIVERSHIP TERMINATED

(Continued from page 22)

The Reconstruction Finance Corporation held a first mortgage on the property and believed that the operation should be continued and a further effort made to bring the mills up to a profitable operation. These officers refused to continue the operation and accordingly an application was made for the appointment of equity receivers.

On March 20, 1939, Hon. Frank Cooper, United States District Judge, sitting at Albany, N. Y., made an order appointing Winfield E. McIntyre, of Fayetteville, N. Y., and Brayton E. Foster of Dexter, N. Y. as co-receivers of the property with directions to continue the operation of the business. A. Raymond Cornwall, an attorney at law of Watertown, N. Y. was attorney for the Reconstruction Finance Corporation in connection with the application for receivers and thereafter withdrew as such attorney and became attorney for the receivers by appointment by the Court. Mr. Cornwall has continued as such attorney for the receivers and has taken an active part in the management of the business under the receivership.

The receivership has been successful and out of earnings the receivers have quite thoroughly rehabilitated and repaired both mills, including the installation of a new boiler plant at each mill, and otherwise brought the operation up to a satisfactory point of efficiency, to the end that upon their own application the receivers were discharged by the court.

K. C. Irving of St. John, New Brunswick, E. F. Malkin of Quebec City and associates have acquired corporate control of Dexter Sulphite Pulp and Paper Company and accordingly upon the discharge of the receivership they came into possession and control of the corporation and will operate it in the future. Mr. Cornwall, who has assisted in handling the receivership, will remain with the new organization as a director and as attorney and will assume the office of secretary of the corporation.

Mr. Irving comes from St. John, N. B., and is new to the paper industry. He is however a man of substantial business interests in Canada, being interested in at least three pulp wood companies, a large veneering mill, a lumber mill, a large oil company, a bus line corporation covering a large part of Eastern Canada, and is interested in water transportation.

Mr. Malkin comes from Quebec and is part owner of two pulp wood concerns and an officer in the D'Auteuil Lumber Company, also a pulpwood concern in Quebec. It is expected that by reason of their connections an adequate supply of wood pulp will be assured to Dexter Sulphite Pulp and Paper Company, which, because of the present shortage of wood, has become a serious problem in the operation of pulp mills in both the United States and Canada.

The new management, it is understood, proposes to further rehabilitate the Dexter mills and to make many improvements therein.

One of the first acts of the new management has been the negotiating of contracts for the sale of the products. A sales agreement has been entered into with the Cellulose Sales Corporation of 250 Park avenue, New York, for the sale of all the sulphite produced at the Dexter mill, and a similar contract has been made with Johaneson, Wales & Sparre, Inc., of the same address, for the sale of all paper produced. The Dexter Sulphite Pulp and Paper Company will have an office at 250 Park avenue, New York.

The manufacture of the present grades of paper will be continued for the present, but with the expectation of gradually getting into a line of better grades.

Temporary officers of the corporation have been elected for the purpose of completing the reorganization of the corporation, and it is expected that E. F. Malkin will become the permanent president and will move his residence from Quebec to Watertown; K. C. Irving will be the vice-president and A. Raymond Cornwall the secretary. N. R. Johaneson, president of Cellulose Sales Corporation and Johaneson, Wales & Sparre, Inc., will be elected a director of the corporation, and other interests will be represented on the board, when the reorganization has been completed.

New York Paper and Pulp Market Review

OPA Announces Agreement For All Paper Merchants To Sign This Month and Suggests Prices For Used Multi-Wall Paper Bags — Pulp Market Strong — Larger Supply of No. 1 Mixed Paper.

Office of the PAPER TRADE JOURNAL
Wednesday, April 8, 1942.

An easier supply situation in many kinds of paper is reflected in reports received this week from many manufacturers' representatives, jobbers, and general paper merchants. This situation has been predicted by some government spokesmen and by business economists. The curtailment and stoppage in the production of automobiles, electrical appliances, etc., has resulted in a heavy decline in consumption from these sources, and the effects are becoming more marked. With large consumers requiring little if any paper this year for advertising and drastic curtailment of paper board for packaging, shipping and paper for other uses, this decline is expected to continue, as the production capacity of the nation is more and more diverted from civilian to military production.

The index of general business activity for the week ended March 28 was unchanged at 133.8%, from the preceding week, compared with 124.3% for the corresponding week last year. Paper board production declined 2.2%.

Paper production for the week ended March 28 was estimated at 103.0%, compared with 94.5% for 1941, with 82.6% for 1940, with 86.2% for 1939, and with 72.3% for the corresponding week for 1938.

Paper board production for the week ended March 28 was 101.0%, compared with 84.0% for 1941, with 67.0% for 1940, with 74.0% for 1939, and with 58.0% for the corresponding week for 1938.

The OPA advised all paper merchants on March 24 of an agreement, requesting merchants of coarse papers to sign the voluntary price agreement by April 10, and fine paper merchants to sign by April 15. It is viewed in some quarters of the industry that this pact is likely to have considerable effect on the merchandising plans of mills who normally sell considerable tonnage through paper merchants.

The OPA has just announced suggested prices for used multi-wall paper bags, or paper shipping sacks, to encourage conservation of kraft paper. Investigations have shown, the release said, that demand for multi-wall bags may increase to 60,000,000 this year, or about 20,000,000 more than used last year. Manufacturers estimate that 75% of the 1942 production of new paper shipping sacks can be reused, if the dumpers issue instructions to workers in the proper handling of the bags.

Paper prices are firm under an active general demand for all major lines.

Chemical Pulp

Reports of lower than current quotations on wood pulp and that the OPA has announced ceiling prices, is not confirmed. An OPA price schedule is expected to be issued soon. In the meantime, as instructed by the OPA, some sellers of pulp are invoicing at first quarter prices, subject to any adjustments that may be required to meet the OPA prices when issued. Other sellers are shipping on contract without naming prices, subject to billing conforming to the OPA prices when issued.

The trend in wood pulp prices is apparently headed upward. Sales of bleached sulphite are reported as high as $85 per ton on contract.

Rags

New cotton rags are active, with demand centered in the low and medium grades. Demand for the roofing grade is also active. Prices are unchanged.

Old Rope and Bagging

Demand for No. 1 Manila rope is steadily absorbing available supplies. Prices on all grades are firm and unchanged.

Old gunny is stronger this week under the influence of improved buying and a limited supply. Prices are quite firm and higher prices are expected in some quarters.

Old Waste Paper

The supply situation in No. 1 mixed and in folded news is easier. The OPA has lifted the restrictions imposed on mills and inventories of waste paper are expected to be increased reasonably in the future. OPA prices prevail.

Twine

No important change in the market situation in twine has been reported at this date. Prices are firm and demand is active on all grades of hard and soft fiber twine.

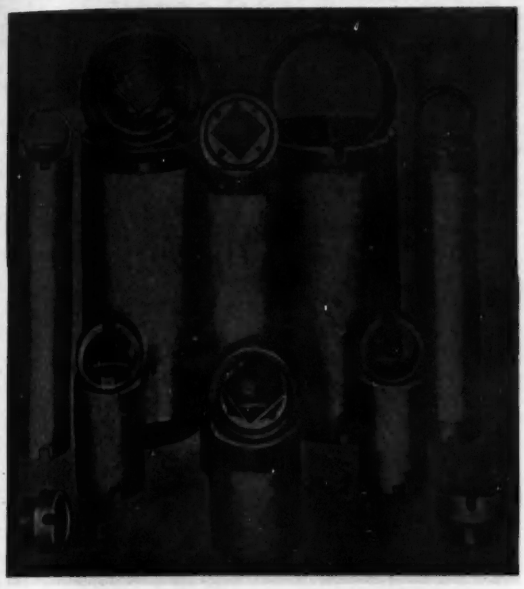
Action Sought from Paper Firms

AUGUSTA, Me., April 6, 1942—After officially accepting the 133 page report submitted by Boston engineers on an exhaustive study of the Androscoggin River, the Maine Sanitary Water Board, voted to call the engineers' recommendations to the attention of the International Paper Company, Livermore Falls, the Oxford Paper Co., Rumford, and the Brown Company of Berlin, N. H., to see what action, if any, those firms would take. The report had blamed those concerns for the bulk of the river pollution.

Prepared at a cost of $7,000 by Metcalf and Eddy, the final report repeated that if the three above named companies constructed lagoons to store sulphite waste through the warm months the river smell nuisance could be eliminated. The total cost to the three firms was estimated at $555,000.

No Change in Pulp Prices

Unofficial reports to the effect that the Office of Price Administration has issued ceiling or maximum prices on wood pulp are at this date unconfirmed. The voluntary agreement between pulp producers and the OPA, not to change prices for this year, is still in effect and will continue until such time as the OPA decides to issue any further change in official wood pulp quotations.



ELIXMAN

CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

CORES

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

Appleton Wires are Good wires

Appleton Wire Works, Inc.
Appleton, Wis.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL
Wednesday, April 8, 1942.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is currently quoted at $60 per ton, f.o.b., works. Demand reported good for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Demand reported good for the week. Bleaching powder is currently quoted at $2.25 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are unchanged for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 22½ cents per pound; 80-100 mesh, at 23 cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 17 cents per pound, c.i.f. No quotations in French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Demand reported good. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, car lots, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Demand absorbing production. No further change in restrictions of use. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices lower on some grades. "G" gum rosin is currently quoted at $2.94 per 100 pounds, in barrels, Savannah. "FF" wood rosin is currently quoted at $2.92 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $3.30 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm. Demand good for the current week. Domestic salt cake is currently quoted at $15 per ton, in bulk; chrome salt cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16 per ton imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported good for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and are reported unchanged for the current week. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina. Demand reported good for the current week. The commercial grades are currently quoted at from $1.15 to $1.25; iron free at from $1.75 to $1.85 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$6.00	@	$7.00
Superstandard	5.25	"	6.25
Northern Standard Wrapping	4.75	"	5.25
Standard Wrapping	4.75	"	—
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.05	"	—
White No. 1½	1.00	"	—
White No. 2	1.00	"	—
Anti-Tarnish M. G.	.95	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.35	"	—
Bleached, Jr.	2.65	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.75	@	10.75
No. 1 Manila Wrapping, 35 lb.	5.50	"	5.75
No. 2 Manila Wrapping, 35 lb.	5.25	"	5.50
Boards, per ton—			
News	*48.00	@	—
Chip	*45.00	"	—
Sgl. Mla. Ll. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*60.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers
100% Rag Ext. No. 1	$40.25 @	$47.25	$41.40 @ $48.50
100% Rag	32.20 "	37.75	33.35 " 39.25
85% Rag	.... "	....	32.20 " 37.75
75% Rag	24.75 "	29.00	25.90 " 30.50
65% Rag	.... "	....	22.80 " 27.75
50% Rag	18.70 "	22.75	19.90 " 24.25
25% Rag	16.40 "	20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers
No. 1	$10.55 @	$12.75	$11.70 @ $14.25
No. 2	9.65 "	11.75	10.80 " 13.25
No. 3	9.20 "	11.25	10.35 " 12.50
No. 4	8.90 "	10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$15.50
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. & S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. & S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C.	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	No price		
Dry	No price		
(Delivered)			
No. 1 Domestic and Canadian	40.00	@	41.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.62½	@	4.75
Prime Qualities—Easy-Bleaching Sulphite	3.17½	"	4.00
Strong Unbleached Sulphite	3.17½	"	4.00
News Grade, delivered Unbleached Sulphite	63.75	"	67.75
(On Dock, Atlantic Ports)			
Kraft Bleached	4.12½	"	—
Kraft Light & Strong	No price		
Kraft No. 1	No price		
(Delivered)			
Kraft Domestic and Canadian	3.00	"	4.00
(Delivered)			
Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	8.00	@	8.25
Silesias No. 1	4.50	"	4.75
New Unbleached	8.00	"	8.25
Blue Overall	5.75	"	6.00
Fancy	3.00	"	3.25
Washables	2.50	"	2.75
Mixed Khaki Cuttings	2.50	"	2.75
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
* Old Manila Rope	5.75	"	—

*OPA Maximum Prices.

Foreign Rags

All prices nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.50
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	@	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40

National Paper Dyes

Fiber as well as color analysis of "samples to match" is part of the everyday work of National Technical Service. Equally practical is the assistance we can render through suggesting the fiber and dye formula that will meet the distinctive use requirements of the sheet that is your current problem.

For the solution of a particular problem or for general technical consultation, National invites your inquiry.

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET NEW YORK, N. Y.

BOSTON PHILADELPHIA GREENSBORO CHATTANOOGA
PROVIDENCE SAN FRANCISCO ATLANTA PORTLAND, ORE.
CHICAGO CHARLOTTE NEW ORLEANS TORONTO

A SPECIAL NEW CARBON BLACK

Tailor-made for Paper Products

WITCO CARBON BLACK NO. 11 meets a long-felt need in the paper industry. It is a new carbon black produced especially for use in paper manufacture.

It is a pellet black of the dustless type—cleaner than the compressed black generally used in paper making. It disperses better, is more easily incorporated in the beater—and is more economical in cost and in use.

Never before have you had a better opportunity to improve the quality of your black papers—and at the same time make a saving. Use the coupon below to obtain a sample of WITCO CARBON BLACK NO. 11 or get further information from one of our representatives.

WISHNICK-TUMPEER, INC.

Manufacturers and Exporters

WITCO

New York, 295 Madison Avenue • Boston, 141 Milk Street • Chicago, Tribune Tower • Cleveland, 616 St. Clair Avenue, N. E. • Witco Affiliates: Witco Oil & Gas Company • The Pioneer Asphalt Company • Panhandle Carbon Company • Foreign Office, London, England.

WISHNICK-TUMPEER, INC.
295 Madison Avenue, New York, N. Y.
Gentlemen:

☐ Please send me a sample of WITCO CARBON BLACK NO. 11.
☐ Please have your representative call on me.

NAME .....
TITLE .....
FIRM .....
ADDRESS .....
CITY .....
STATE .....
Dept. J

Ord. Light Prints...	1.75	"	2.1?
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues....	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.00	@	4.25
Wool Tares, light....	4.25	"	4.50
Wool Tares heavy..	4.50	"	4.75
Bright Bagging.....	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads.....	4.25	"	4.75
Sisal Strings.....	3.25	"	3.75
Mixed Strings.....	1.10		1.20

* OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts....	3.12½	"	—
No. 1 Hard White Shavings, unruled.	2.87½	"	—
No. 1 Hard White Shavings, ruled...	2.50	"	—
Soft White Shavings, one cut.....	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings..	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines.....	1.57	"	—
Mixed Books.....	1.07½	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut..	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas.....	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft.	2.50	"	—
New 100% Kraft Corrugated Cuttings..	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	1.75	"	—
Old Corrugated Containers	1.00	"	—
Box Board Cuttings.	.72½	"	—
White Blank News.	1.65	"	—
Overissue News.....	.85	"	—
No. 1 News.....	.75	"	—
No. 1 Mixed Paper.	.70	"	—

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp.....	.21	"	—
Fine Polished—			
Fine India.....	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers.....	.17	"	—
Tube Rope.....	.19	"	—
Wall Paper.....	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope...	.19	"	—
Cotton	.25	"	—
(Hard Fiber)			
Medium Java.....	.18	"	—
Mex. Sisal.....	.16	"	—
Manila	.26	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.07¼	@	.07½
New White No. 2.	.04½	"	.05
Light Silesias..	.04½	"	.04¾
Silesias, No. 1.....	.04	"	.04¼
Black Silesias, soft	.03¾	"	.04
New Unbleached..	.07¼	"	.07½
Washable Prints...	.03¼	"	.03½
Washable No. 1..	.02	"	.02¼
Blue Overall.....	.04½	"	.05½
Cottons—According to grades—			
Washable shredding	—	"	.01¾
Fancy Percales....	.03¼	"	.03½
New Black Soft...	.02¾	"	.03
New Dark Seconds	1.75	"	2.00
Khaki Cuttings—			
No. 1 O. D.....	.03	"	.03¼
No. 2 Mixed.....	.02¼	"	.02½
Corduroy	.01¾	"	.02¼
New Canvas.....	.04¾	"	.05¼
New Black Mixed.	—	"	.02½

Domestic Rags (Old)

White No. 1—Repacked	3.80	"	—
White No. 2—Repacked	2.90	"	—
Miscellaneous No. 1.	3.20	"	—
Miscellaneous No. 2.	2.65	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings— (Export)	Nominal		
Roofing Stock—			
Foreign No. 1.....	Nominal		
Domestic No. 1...	1.55	"	—
Domestic No. 2...	1.45	"	—
Roofing Bagging..	1.35	"	—
Old Manila Rope...	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
Sisal Rope.....	3.75	"	—
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	3.25	"	3.50
No. 2.....	1.75	"	1.80
Wool Tares, heavy...	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila.)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled..	2.50	"	—
Soft White Shavings, one cut.....	2.87½	"	—
White Blank News..	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 White Ledger.	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines.....	1.57	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper.	.70	"	—
Box Board Cuttings.	.72½	"	—
Jute Corrugated Cuttings	.90	"	—
Overissue News.....	.85	"	—
No. 1 News.....	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled.	2.87½	"	—
No. 1 Hard White Shavings, ruled...	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut.....	2.87½	"	—
Hard White Envelope Cuts, one cut....	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft.	2.50	"	—
Mixed Kraft Env. & Bag Cuttings.....	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines.....	1.57	"	—
New Manila Envelope Cuts, one cut.....	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News..	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper.	.70	"	—
Overissue News.....	.85	"	—
Box Board Cuttings.	.72½	"	—
New Corrugated Cuttings, Kraft.....	2.25	"	—
Old Corrugated Containers	1.00	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	4.25	@	4.50
Sisal Rope.....	4.50	"	4.75
Mixed Rope.....	1.00	"	1.25
Transmission Rope—			
Foreign	(nominal)		
Domestic	4.00	"	4.25
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope.....	5.25	"	5.50
Jute Carpet Threads.	3.25	"	3.50
Bleachery Burlap....	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	—	"	4.00
Scrap Sisal.....	4.25	"	4.50
Scrap Sisal for Shredding	4.75	"	5.00
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	4.50
Aust. Wool Pouches.	5.75	"	6.00
New Burlap Cuttings	5.50	"	5.75
Heavy Baling Bagging	5.50	"	5.75

Paper Mill Bagging..	3.00	"	3.2?
No. 2 Bagging.....	1.35	"	—

* OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	.04½	@	.04¾
Fancy Percales....	.04¾	"	.05
New White No. 1.	.08	"	.08¼
New Light Flannelettes	.06	"	.06¼
Canton Flannel, Bleached	.08¼	"	.08½
Underwear Cutters, Bleached	.08	"	.08¼
Underwear Cutters, Unbleached	6.50	"	6.75
Silesias No. 1.....	.06	"	.06¼
New Black Silesias..	.03½	"	.04
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached....	.08¼	"	.08½
Blue Cheviots....	.04¾	"	.05
Fancy	.02¾	"	—
Washable	.01¾	"	—
Cottons According to Grades—			
Blue Overalls.....	—	"	.05½
New Black, Soft..	.03¼	"	.04
Khaki Cuttings.....	.04¾	"	.04¾
O. D. Khaki.....	.04½	"	.04¾
Corduroy	.02	"	.02½
New Canvas.....	.06	"	.06½
B. V. D. Cuttings...	.07¾	"	.08

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	—
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls...	2.25	"	2.30
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.55	"	—
No. 2.....	1.45	"	—
No. 3.....	1.35	"	—
No. 4.....	1.35	"	—
No. 5, Quality A..	1.35	"	—
Quality B..	1.20	"	—
Quality C..	.95	"	—
* Old Manila Rope..	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

(F. o. b. Boston)

Canvas	(nominal)
Dark Cottons.....	(nominal)
Dutch Blues.....	(nominal)
New Checks and Blues	(nominal)
Old Fustians.....	(nominal)
Old Linsey Garments.	(nominal)
New Silesias.....	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices.

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled.	2.50	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	—
No. 1 Heavy Books & Magazines.....	1.57	"	—
White Blank News..	1.65	"	—
Mixed Kraft Env. & Bag Cuttings..	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News.....	.85	"	—
No. 1 News.....	.75	"	—
No. 1 Mixed Paper..	.70	"	—
No. 1 Roofing Rags.	1.55	"	—
No. 2 Roofing Rags..	1.45	"	—

G. S. Barton Heads Rice Barton Corp.

At a meeting March 2, 1942, of the stockholders of Rice Barton Corporation, the following officers were elected for the ensuing year: President, George Sumner Barton; Vice President, J. Warren Vedder; Vice President and General Manager, Charles Sumner Barton; Vice President and Sales Manager, Lester M. Start, Sr.; Assistant Sales Manager, Charles S. Adams; Treasurer, Stuart B. Dickerman; Assistant Treasurer, Frank W. Davis; Secretary, Stephen B. Stafford. Board of Directors: George Sumner Barton, J. Warren Vedder, Charles Sumner Barton, Lester M. Start, Sr., Stephen B. Stafford, Stuart B. Dickerman, Robert H. Taylor, Frank C. Smith, Jr.